JULY, 1955

Traffic Engineering

Aerial View of Part of Downtown Wilmington

- One Year of Traffic Engineering in Wilmington, Delaware
- Relief for Pittsburgh's Traffic Congestion Through Curb Parking Regulations
- Toll Road Trends in the States

Official Publication of the Institute of Traffic Engineers

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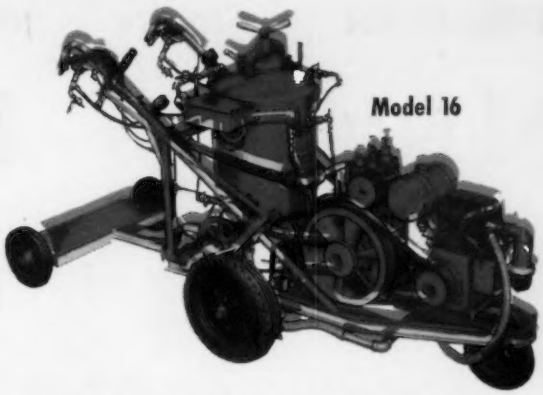

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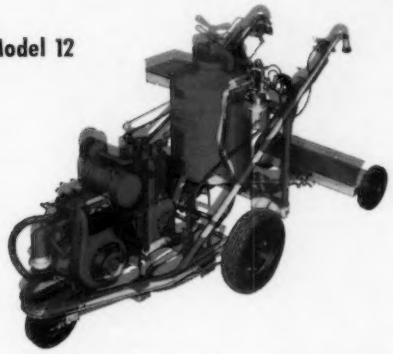

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Traffic Engineering

OFFICIAL PUBLICATION OF THE INSTITUTE OF TRAFFIC ENGINEERS

VOLUME 25 JULY, 1955 NUMBER 10

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COVER: Aerial view of Wilmington, Delaware. Over half of the state's population is in the Wilmington Metropolitan area, and this combined with narrow streets creates a major problem for the traffic engineer. The largest industry located in Wilmington is the E. I. duPont de Nemours Company which maintains its executive departments and research laboratories here.

DEFINITION: Traffic Engineering is that phase of engineering which deals with the planning and geometric design of streets, highways, and abutting lands, and with traffic operation thereon, as their use is related to the safe, convenient, and economic transportation of persons and goods.

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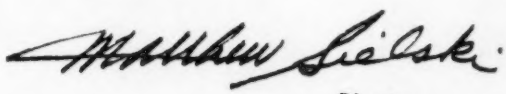
Frankly Speaking

RECENTLY, A TOP LEVEL HIGHWAY ENGINEER had this to say about our Traffic Engineering profession: "The trouble with you traffic engineers is that you spend too much time on the old reliable methods of handling traffic and do very little towards finding new methods for traffic control". He was referring, of course, to the need for more research by the members of our profession. One of the last bits of advice passed on by our late beloved friend, Ted Matson, pertained to the subject of basic research in our profession. As Ted so well phrased it, "The urgent pressures of daily problems have not permitted, up to this time, the necessary proportionate share of intellectual curiosity about the fundamental problems of traffic movement". Ted's thought was that we are either too busy for research if we are salaried traffic engineers, or we find it uneconomical to spend the time if we are consultants. In the meantime, the great increase of traffic constantly demands new thoughts, new ideas, and new inventions for moving traffic safely and expeditiously.

I was quite amazed recently, when I attended an Open House held by one of our leading traffic signal manufacturers, to learn of the many new ideas that have been developed in the traffic signal field. My host explained to me that signal manufacturers, as a result of increased knowledge of electronics, have been able to do miracles with special signal controls. His big disappointment was that so very few traffic engineers were capable of putting those complicated "electric brains" into use. With the rapid strides being made in electronics and television, a new avenue of approach to intersectional control could be realized. Engineers have not yet realized it. Obviously, more research must be done by those who are familiar with the subject of traffic engineering.

There are several avenues for this research. First of all, we ought to give serious consideration to the expansion of traffic engineering courses at recognized engineering schools. The establishment of such departments would inevitably lead to research projects carried on through grants. Another approach is to develop closer liaison between our profession and closely allied professions, as was so vividly brought out by Joe Havenner in his April editorial for TRAFFIC ENGINEERING. Still a third method is through the work of the Technical Council of the ITE. The membership of our Institute is still not giving a sufficient amount of time to this very valuable activity of our profession.

Regardless of the method, it is obvious to me, as it is to other traffic engineers, that the movement of vehicles is "big business" today. We must continue to find new ways of coping with these traffic problems if we are to meet the challenge before us. No halfway methods will do. It is no exaggeration to say that America's transportation future will depend on the research work we do today.



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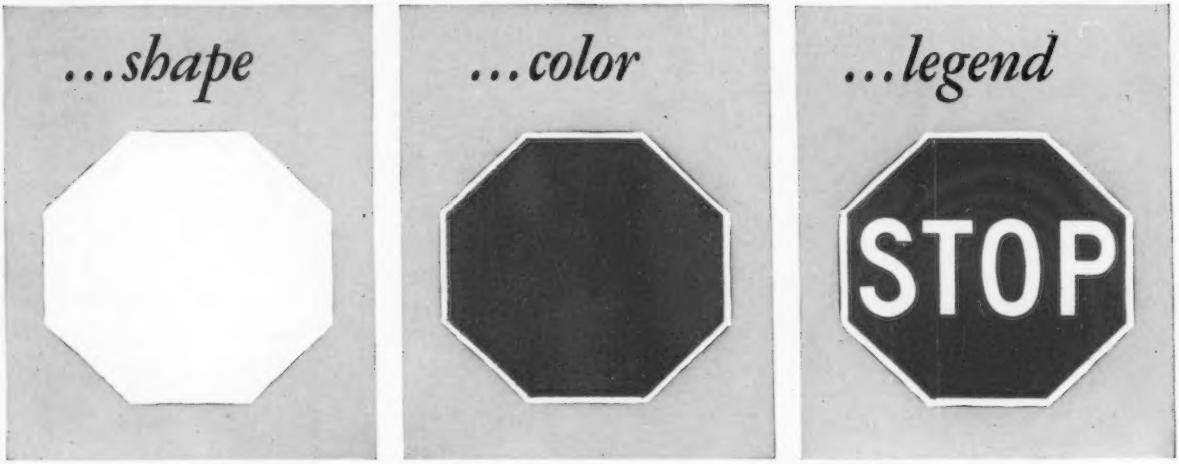

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One Year of Traffic Engineering in Wilmington, Delaware

By Robert A. Mitchell, (Mem., ITE)
Traffic Engineer, Wilmington, Delaware

WILMINGTON, DELAWARE, the largest city in the first state, has a population of approximately 115,000 and an increasing traffic problem. Because of its narrow streets, large industries, and geographical location, Wilmington experiences more of a problem with vehicular traffic than many larger cities (see Figure 1).

In addition, the growth of the suburbs during the past decade has been so rapid that today another 150,000 persons reside on the outskirts of Wilmington. According to the Delaware State Highway Department, vehicle registration in the State has increased from 72,000 vehicles in 1940 to 132,000 vehicles in 1953, and last year there were 82,000 vehicles registered from the Wilmington Metropolitan area.

Traffic engineering is not new to Wilmington. Mr. Edwin Koester, a former member of the Institute of Traffic Engineers, held the dual post of traffic engineer and assistant chief engineer until he was appointed chief engineer of the Street and Sewer Department in 1948. Under his direction many traffic improvements, such as one-way streets, coordinated traffic signal systems, and parking restrictions were instigated.

After his promotion to the position of chief engineer, his assistant, Mr. Earl Krapf, was given the traffic engineering assignment. The planning of a large sewage disposal plant and the transfer of garbage disposal to the Street and Sewer Department added so much more work to the chief engineer's office that it was realized they could not give proper attention to the problem of vehicular traffic control, which influential citizens charged needed the supervision of a full-time traffic engineer.

One of the candidates for Mayor in 1953 stated that if he was elected he would employ a traffic engineer and give him whole-hearted support and backing in a program to improve traffic conditions in the City. Mayor Walz was duly elected and met with civic organizations, prominent citizens, directors of the Street and Sewer Department and the chief engineer to put this pledge into action. It was decided to employ a traffic engineer with a good deal of practical experience in urban traffic engineering and a recognized background of accomplishments, who could be relied upon to handle the job without any outside guidance. The first full-time traffic engineer of Wilmington, Delaware, was appointed on April 1, 1954.

To appreciate the experiences and problems of a traffic engineer's first year in a city one should first know the governmental functions and authorities that prevail. The operation of the City of Wilmington is unique in its organizational pattern, as indicated in Figure 2. Authority over the streets and highways within the City is vested by an act of the State Legislature in three Directors of the Street and Sewer Department. The Directors are citizens appointed by

—Courtesy Delaware State Chamber of Commerce

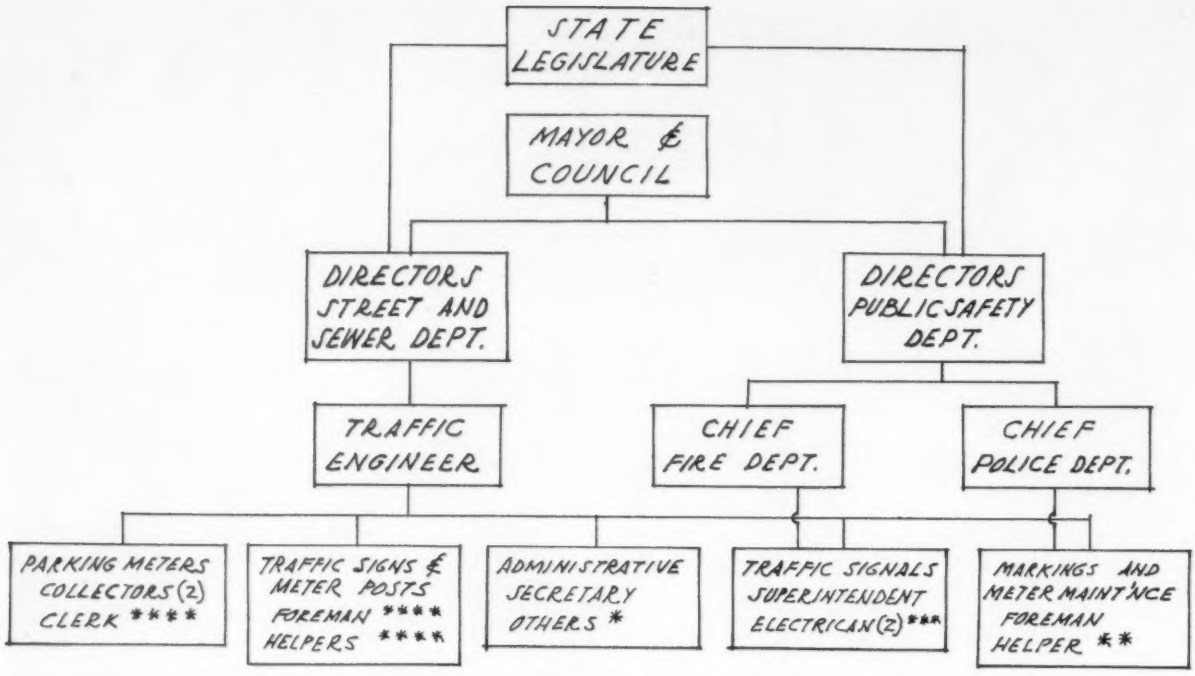
Fig. 1
Market Street and the main retail shopping district of Wilmington. This view is looking north from 6th Street.

the Mayor for a term of six years each, one every two years. They draw a small annual salary and meet regularly once a week at an open meeting to hear from the public and act on departmental business. Their approval or disapproval is the law. The Directors also have the authority to hire and fire all personnel and set the salary scale. The Mayor and City Council, however, must appropriate the money. The city employees of Wilmington are not under Civil Service. The Department of Public Safety has a similar set-up, with three Directors, appointed by the Mayor, determining the policies of the Police and Fire Department.

The erection and maintenance of signs, markings, and parking meter posts is carried out by employees of the Street and Sewer Department as a part-time job. Traffic signals are maintained by a three-man crew in the Fire Department, who also attend to the fire and police alarm systems (the salary of one of these men is paid by the Street and Sewer Department). Paint markings and parking meters are the responsibility of two men in the Police Department, one of whom is paid by the Street and Sewer Department.

Funds for the purchase, erection and maintenance of traffic control equipment during this first year have not been adequate, mainly due to the fact that the fiscal year is from July first to June thirtieth and the budget for 1954-55 had already been determined before a full time traffic engineer was appointed. The custom has been to allocate forty percent of the parking meter revenue for this purpose, including approximately $12,000 for personnel of the Street and Sewer Department and about $12,000 for traffic control equipment. During 1954-55 $8,500 additional was provided by the City Council for a traffic island and traffic signals on the 10th and 11th Street traffic project.

Although there is no way to accurately determine the total budget for traffic engineering activities during the past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** WAGES PAID BY STREET & SEWER DEPT.
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Fig. 2
Organizational chart.

year, the following is an approximation:

Administrative Personnel	$14,400
Operating Personnel	29,200
Meter Revenue for Traffic Equipment	13,000
Appropriation for Traffic Equipment	8,500
Office and Travel Expenses	1,500
Total	$66,600

The need for additional personnel and equipment has been recognized by the administration. There is included in the 1955-56 budget funds for additional personnel in the administrative office and over $52,000 for traffic signal equipment. The administration is also taking favorable action on placing under the jurisdiction of the traffic engineer all personnel, funds and equipment connected with the installation, operation and maintenance of signals, signs, markings and parking meters.

Outside of the operational conditions which it is hoped will be changed to those more in keeping with proper traffic engineering management, it was found that the highway and parking conditions were a source of a great deal of the city's traffic problems. Through no fault of the City administration, the State Legislature has never authorized the allotment of some share of the gasoline tax to Wilmington for highway purposes. All city streets, except a relatively small percentage designated as state highways, have been paved or repaved with the abutting property owners paying the cost of one-third of the street width and the Street and Sewer Department, with funds from the local taxpayer, providing the remainder of the cost. This financial burden on the Wilmington taxpayers has resulted in adverse public reaction to this method, influencing the administration to keep its street improvement program at a minimum. Several bills have been introduced at this year's legislative session to do away with the "Abutting Paving Law" and return a share of the gasoline taxes to the cities. No final action, however, has been taken at this time.

There seems to be more demand for parking space in downtown Wilmington than for most cities its size, or even larger. Two large office buildings which house the administrative offices of the huge Du Pont Company are located here. Although the company has provided several blocks of parking lots, many employees are forced to park their cars on the street. Hundreds of employees traveling between the main office and other company plants in the vicinity, salesmen, suppliers of goods and commodities and many others doing business with the company have need for parking space for their vehicles.

There are, of course, many other companies with office space in this district who generate the need for parking space together with the retail store employees and the shoppers that normally demand parking in every city. Because of the demand, parking is permitted on both sides of many of the downtown streets leaving room enough for only one lane of moving traffic. Stopping, however, is prohibited, either in the morning or in the afternoon, on the most heavily traveled streets.

It did not take long for the new traffic engineer to realize that eliminating curb parking from at least one side of these narrow streets would greatly improve the movement of traf-

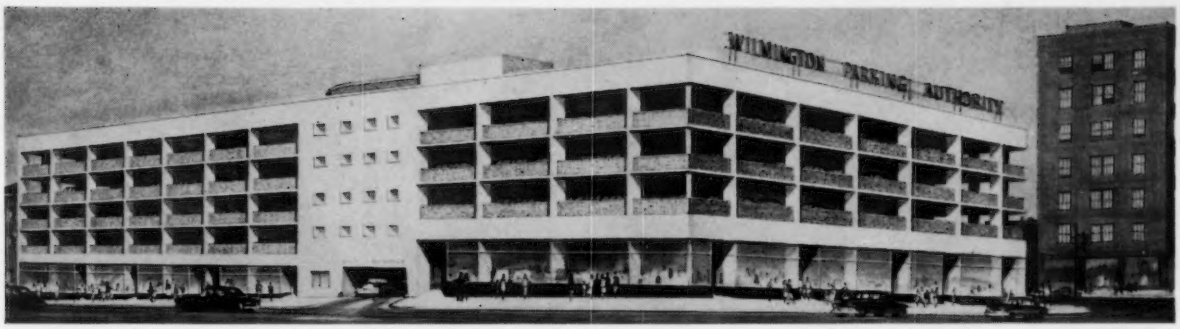


Fig. 3

Proposed 800 car parking garage, to be built by the Wilmington Parking Authority. The site is owned by the Authority and leased as a public parking lot. This rendering, prepared by Parsons, Brinckerhoff, Hall and Macdonald, was furnished by the Wilmington Parking Authority.

fic. However, until such time as off-street parking facilities could be provided, it would be unsound to recommend this action. This point of view was discussed very freely with the civic organizations, retail merchant groups, and other citizens in a series of speaking engagements, and appears to have gained their whole-hearted support.

As an outcome, the downtown retail merchants have organized a new group managed by a paid employee with a good public relations background. This group is developing methods of providing additional off-street facilities and a system of fringe parking lots for employees with express transit service to and from downtown. This program is progressing nicely.

Wilmington has had a Parking Authority for about three years. This Authority purchased a considerable amount of property in a strategic downtown location and leases the property as a public parking lot. They have attempted to build a parking garage (Figure 3) with approximately 800 parking spaces on this property but have been beset with a financial problem. This situation now looks more promising and it may not be long before this garage will be built. When this is completed, an equivalent number of curb parking spaces can be eliminated on important downtown streets.

There is little expectation that a traffic engineer will "set the world on fire" in one year's time, particularly in a city never having had a full-time traffic engineer. Success in traffic engineering depends to a great extent on the operational organization, assigned authority and available funds. The public was informed, in talks to various civic groups and through newspaper publicity, that they were not to expect any major traffic improvements because organizational problems would take most of the efforts of the new traffic engineer for at least a year. Most of the citizens, aware of the problems, were patient and cooperative. However, after about six months rumors were heard that some people were beginning to ask questions about the apparent inactivity.

Coming into a city with no previous full-time traffic engineer also has its advantages in that there are sure to be a number of bad traffic conditions that are obvious to a trained traffic engineer which need not take too much study to correct. At least this was true in Wilmington.

Although Wilmington folks were accustomed to one-way streets and appreciated their value, two east and west streets, fairly wide for Wilmington, which connected at the fringe of the downtown district and the west, were each operating as two-way streets. Tenth Street, one of the pair, fringed the northern end of the downtown retail district and the southern side of the large Du Pont and Nemours office buildings. Eleventh Street, the other, fringed the north side of the Du Pont and Nemours buildings and both served the public library, governmental buildings, other office buildings, banks and many smaller retail stores. Also, more pedestrians crossed at 10th and Market Streets than at probably any other intersection and it is one of the two in Wilmington where a separate pedestrian interval is used in the signal timing.

Congestion was being created by left-turning movements, inefficient use of street width, improperly timed signals, coaches and buses two way on both streets, and other circumstances, in spite of the fact that stopping was banned

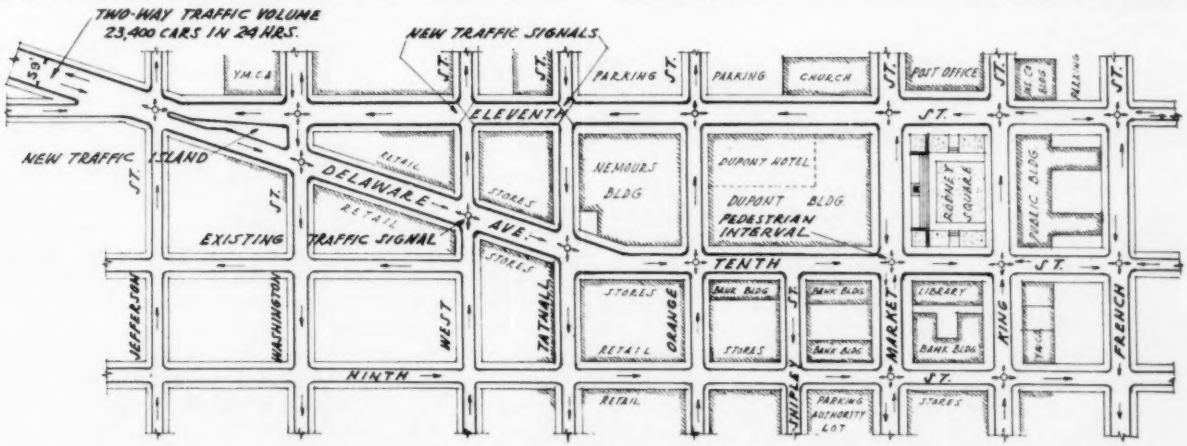


Fig. 4

Plan of a part of downtown Wilmington, showing the Delaware Avenue-10th Street and the 11th Street one-way system.

—Photo by Charles C. Minker of Wilmington

Fig. 5

Construction of a new channelization island on Delaware Avenue between Jefferson and Washington Streets. This intersection is the westerly terminus of the Delaware Avenue-10th Street and 11th Street one-way system.

—Courtesy of the Delaware Coach Company

Fig. 6

Seventh Street, looking east from Tatnall Street. Typical of east-west streets through the central business disrict.

on both sides of each street during peak traffic periods. It was obvious that one-way operation on these streets would provide much better traffic conditions.

Plans were prepared for converting 10th Street and the two blocks of Delaware Avenue, as shown on Figure 4, to an eastbound street from the junction with 11th Street and Delaware Avenue to King Street. It was proposed that 11th Street be converted to a westbound street over the same distance. Three major hurdles had to be overcome. The Delaware Coach Company would have to agree to the changes and spend about $8,000 to install overhead trolley wires for the outbound trolley coaches to be routed over Market and 11th Street, City Council would have to appropriate over $8,000 for new traffic signals and a new concrete island where the streets joined, and the public had to be convinced it was a logical move.

Officials of the Delaware Coach Company were immediately in favor of the plan and were willing to install the new overhead wires. After several meetings with the Du Pont officials, Chamber of Commerce committees and retail merchants groups, it was agreed the change warranted a trial. It took quite a few months for City Council to allocate the funds needed, but finally about the first of November the island was begun and about three weeks later the one-way system went into operation. Figure 5 was taken while the island was still under construction, but after the one-way operation had begun.

The results of this change, after a few minor kinks were ironed out, were actually better than anticipated. Everyone concerned is pleased. The retail merchants on the two streets are particularly delighted because it was possible to provide 27 additional curb parking spaces, even after eliminating angle parking on one side of Market Street opposite the Du Pont Building. The two streets are carrying more traffic than before, even though more curb parking is now permitted, and the coordinated traffic signals provide such a smooth movement that even during the peak traffic hours no real congestion occurs.

This example represents a very important clue to the success of a traffic engineer starting in a smaller city, particularly where neither the public nor the city officials have a clear concept of traffic engineering requirements and techniques. In most cases the traffic engineer has to "fight" for and prove the need for more authority, money, manpower and equipment.

The public was told an expert had been hired to solve the traffic problem and they expected to see results. It was important, therefore, that major yet simply executed improvements be effected which would be easy to sell, cost relatively little, and show results which are immediately evident. The confidence and backing of the people of Wilmington and the city officials thus gained has been an important factor.

Analyzing data contained in a parking survey of the core of the central business district, made for the Wilmington Parking Authority, it was found that a high percentage of curb parking space in one-hour zones was being usurped by long-time parkers. Numerous observations of parked cars added to the conviction that there were many downtown employees and employers parking illegally. Figures 6 and 7 illustrate the kind of problem which had to be faced.

Knowing that some cities had prohibited parking downtown in the morning to eliminate employees getting in early and taking parking spaces which should be reserved for shoppers it was recommended that such a regulation be put into effect in downtown Wilmington. The recommendation was approved by the Directors of the Street and Sewer Department and all curb parking in the downtown district was prohibited from 7:30 to 9:15 A.M. The results were very satisfactory and accepted by all business people except the restaurant operators who claimed their breakfast business was suffering. They could not produce any satisfactory data to prove their assertion, however, and after about six months are still in business and have made no further demands on the Directors to rescind the regulation.

Wilmington is unique in being the only city of over 100,000 population which has inflicted upon it by the State Legislature a farmers' market on a main traffic artery in the central business district. Four days each week the blocks from 3rd to 9th Streets on King Street, which is the next street to Market, the main downtown shopping street, are turned over to the farmers who back their trucks into the curb and sell farm produce. The farmers have been selling on King Street for over a hundred years and the City has no authority to stop it. An act of the State Legislature designates King Street as the place for the Farmers' Market and states that the farmers' trucks shall use one side of the street one day and the other side the next day. Since King and Market

(Continued on page 400)

Relief for Pittsburgh's Traffic Congestion Through Curb Parking Regulations

By Michael J. Gittens, (Assoc. Mem., ITE)
Traffic Engineer, Pittsburgh, Pennsylvania

AS EARLY AS 1922, it was recognized that curb parking caused serious interference for the movement of traffic in the central business district of the City of Pittsburgh. Automobiles parked at the curb reduced the number of lanes that were available for the flow of private automobiles, mass transportation vehicles, and truck traffic. The remaining traffic lanes did not accommodate the flow of traffic and congestion was created.

The first regulations were adopted for the elimination of parking on certain sections of important streets in 1922. The regulations were enacted on a selective basis, permitting parking in many locations where it was found that parked automobiles caused least interference with traffic flow. As traffic volumes continued to increase, additional steps were taken to eliminate curb parking at critical locations.

When the traffic peak occurred in 1941, the degree of congestion had reached a critical stage. Additional regulations were helpful, and the decrease in traffic flow which resulted from gasoline rationing and other shortages during World War II provided sufficient relief so that the problem was temporarily relieved.

As automobile production increased following World War II, and the trend in traffic volumes changed accordingly, the need for a comprehensive parking study became apparent. The first report covering curb parking spaces and off-street parking facilities was made public in 1946. The study indicated that there were 318 legal curb parking spaces in the heart of the business district during the peak periods of the day. During the off-peak periods, a total of 845 curb parking spaces were available. The study also indicated that a shortage of off-street parking facilities existed.

Because of the absence of ample off-street spaces, it was the opinion of the City Administration that the elimination of curb parking would be detrimental to the business interests of the community. In addition, new parking garages were needed so that shoppers and people wishing to do business in the downtown area would have convenient parking facilities.

The first two parking garages built by the Pittsburgh Parking Authority were opened for operation in 1952. At that time the Bureau of Traffic Planning undertook a study of the congestion that occurred daily. On an average day, it was found that in the morning peak period, and for some time thereafter, traffic slowed down appreciably; automobile drivers experienced annoying delays in attempting to reach their offices or places of employment.

In the evening peak, traffic moved slowly. Any unusual weather condition resulted in a major breakdown. A disabled automobile or a traffic accident on one of the principal thoroughfares was sufficient to cause long standing delays.

On days of normal business activity, a critical noon peak was noticeable between 11:30 A.M. and 2:00 P.M. During this interval garages and parking lots became filled to capacity, intersections were blocked, curb lanes were fully occupied by parked automobiles and traffic moved at intolerably slow speeds.

Records which were kept by the mass transportation companies accurately indicated the delays encountered in the central business district as the result of improper use of the streets. On average days it was not unusual for street cars to consume 10 minutes or more in excess of scheduled running time during the off-peak period of the day. On numerous occasions peak operation suffered losses exceeding 20 minutes. It was necessary for street car and bus companies to make costly allowances for schedule adjustments in order to maintain satisfactory service.

With the curb lanes occupied by parked automobiles, truckers and purveyors cruised around while waiting for curb spaces to open, or double-parked until a convenient loading area became available. Inability to gain ready access to stores and buildings resulted in costly delays, delivery schedules fell below normal expectancy and the drivers' dispositions were taxed. Parking regulations were difficult to enforce because it was recognized that adequate facilities for serving stores and buildings did not exist.

Downtown Pittsburgh is the economic center of a large Tri-State area. For a period of years traffic congestion was a serious factor tending to decentralize the business district. A survey made by Guide Post Research indicated that shopping in neighborhood stores increased materially during a ten-year period. Following is a list of articles and the respective percentages purchased in neighborhood stores in 1941 and in 1951:

Article	*1941*	*1951*
Women's Dresses, Suits and Coats	15.1%	25.6%
Women's Shoes	22.2	28.5
Men's Suits, Topcoats and Overcoats	10.5	34.1
Men's Shoes	27.2	50.7
Electrical Appliances	32.4	65.8
Radio and Television Sets	27.6	62.0
Furniture and Home Appliances	13.9	37.5

The retail merchants recognized that traffic congestion was detrimental to business activity in the Golden Triangle. The growth of suburban shopping centers threatened the economic life of the business district. The merchants favored the adoption of traffic regulations that would expedite traffic movement into and out of the business area.

Cordon counts were made on the periphery of the downtown business district in May of 1947 and in May of 1953. The information obtained from these counts indicated that the number of vehicles entering the downtown area increased approximately 17.4% in the six-year interval or 2.9% per year. The constant increase in use of the private automobile taxed the capacity of the downtown streets to the extent that additional measures were necessary in order to improve traffic movement.

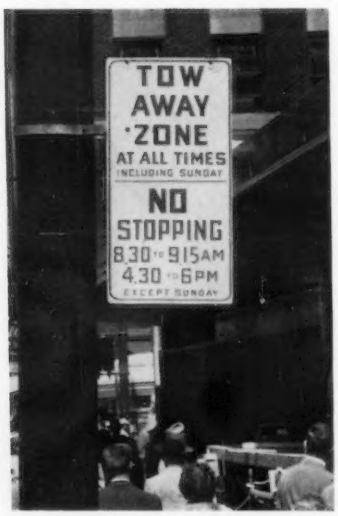
Checks which were made indicated that many of the automobiles, parked at the curb, were owned by the proprietors of stores in the business district or by their employees. By coming into the downtown district early in the morning, a shop proprietor could locate a parking space in a metered zone, were he parked for extended periods of time. The curb parking spaces were not available for the shoppers and patrons of the business places in the downtown area.

When the Parking Authority opened the first two parking garages, approximately 1,500 off-street spaces were added in the downtown district. This number was nearly double the number of curb parking spaces which existed during the off-peak periods of the day. The parking rates were reasonable and therefore induced the shopping trade to use the new facilities. With the added parking spaces, the traffic officials of the City of Pittsburgh recommended to City Council that the following regulations be adopted for the downtown business district:

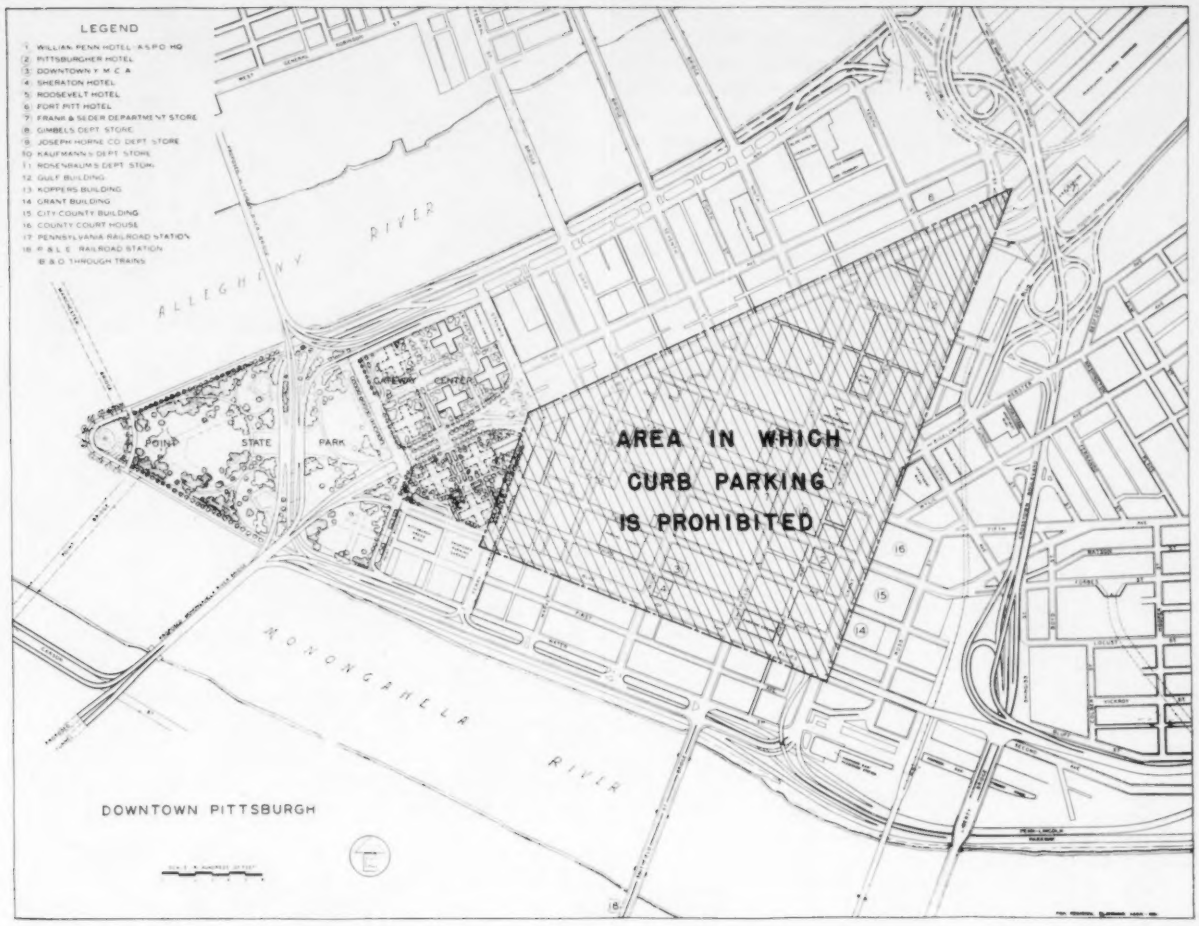
NO STOPPING
8:30 A.M. to 9:15 A.M.
and
4:30 P.M. to 6:00 P.M.

The NO STOPPING regulation prohibits parking and the loading or unloading of trucks in the morning and evening peak periods. Loading and unloading in alleyways is permitted at all times. The restriction on truck deliveries during the peak periods of the day met with the approval of the trucking industry.

TOW AWAY ZONE
AT ALL TIMES



This regulation prohibits the drivers of private automobiles from parking on streets which are marked with signs reading "TOW AWAY ZONE AT ALL TIMES." Truck loading and unloading is permitted in areas marked "TOW AWAY ZONE," providing that the loading is completed as expeditiously as possible, and that the total elapsed time does not exceed thirty minutes.



TOW AWAY ZONE AT ALL TIMES EXCEPT SUNDAY

This regulation was recommended for those sections of the city streets where traffic moved freely on Sundays, and curb spaces were needed for people attending church services in the downtown district.

TOW AWAY ZONE 8:00 A.M. to 6:30 P.M.

On many of the streets in the business district, it was necessary to prohibit parking during the business hours of the day. Parking after 6:30 P.M. was permitted for the benefit of people attending theatres, or having dinner in the downtown district where traffic was relatively light after this hour.

10 MINUTE CUSTOMER LOADING 9:15 A.M. to 4:30 P.M.

A ten-minute stopping privilege is provided on some of the wider streets where street space is not urgently needed for moving traffic, or where the limited stopping privilege does not create congestion. This regulation was recommended in order to accommodate the driver of a private automobile who wishes to make a pick-up or delivery.

Announcements were made, indicating to the public and to the business interests that revisions in the parking regulations were contemplated. Some organizations including the Chamber of Commerce, the Retail Merchants Association, and the Pittsburgh Real Estate Board expressed the opinion that a trial period would indicate the advantages or disadvantages of the proposed revisions. These groups agreed to the adoption of the regulations for a sixty-day trial period.

Numerous objections were raised to portions of the proposed regulations by smaller merchants, theatre owners, restaurant operators, building managers, and purveyors. Through a series of hearings, each group was given an opportunity to express any objections and submit recommendations. In this manner most of the objections to the revised regulations were abated.

City Council was advised by the Department of Public Safety that the revised regulations would be placed in effect. The trial period served to indicate the many advantages that were obtainable through revised regulations. The merchants realized that the elimination of curb parking was not detrimental to business activity. Retail merchandising in the Pittsburgh area increased in volume proportionally to retail sales in other cities.

Studies made by the Bureau of Traffic Planning disclosed that more automobiles were moving on city streets during the peak hours, and the delays to traffic were reduced. The Pittsburgh Railways Company was able to reduce scheduled running time in the downtown business district after the trial period became effective. The traffic police found that the new regulations enabled them to provide impartial enforcement, and the general public was cooperative in abiding by the posted signs.

The revised regulations have been in effect for more than two years, and at present the business interests and the general public are satisfied that the changes are advantageous.

The net result of the revisions is that there are no parking meters used in the area bounded by Liberty Avenue, Ferry Street, the Boulevard of the Allies, and Grant Street, as shown in Figure 4. ALL ONE HOUR PARKING and THIRTY MINUTE PARKING spaces have been removed. Where possible the parking spaces have been replaced with customer loading privileges, limited to a maximum of ten minutes. Truck deliveries during the business day are made between 9:15 A.M. and 4:30 P.M.

On many of the downtown streets parking is prohibited at all times, but on other streets parking is permitted after the normal business day for the benefit of persons patronizing theatres, restaurants, and so forth. Sunday regulations are less rigid in order to permit curb parking in the vicinity of downtown churches.

ONE YEAR OF TRAFFIC ENGINEERING IN WILMINGTON, DELAWARE

(Continued from page 396)

Streets join at a bridge over the Christina River at the southern end and at a bridge over Brandywine Creek at the northern end of the business district, they make a perfect pair for one-way operation which would greatly improve the movement of traffic through the business district.

The city administration, the Delaware Chamber of Commerce, the downtown merchants, the newspapers, and practically all of the influential citizens of Wilmington are all in favor of moving the farmers from King Street, but to no avail. A high percentage of the members of the Legislature are from rural areas and their sympathy lies with the farmers.

The traffic engineer has taken a strong stand in opposition to this market and proposed an alternate location, but without any apparent success. In fact, it seems to have hurt chances of passage of an act to create a separate Bureau of Traffic Engineering, by the State Legislature. This act is being sponsored by the Mayor but the members of the Legislature are predominantly from rural districts and about three-fourths of them are of the opposite political faith.

In looking back over the first year of activity, there is much which has been accomplished. It is encouraging to look forward to even better progress in the future. The big lesson learned is that the traffic problems of smaller cities are just as complicated and as acute, but maybe not as numerous, as they are in the large cities.

In most cases wonderful support and cooperation have been received from all city departments and employees.

—Courtesy of the Delaware Coach Company

Fig. 7

Thirteenth Street, looking west toward Orange Street. Typical of many streets of the fringe of the central business district.

The Directors of the Street and Sewer Department have backed the traffic engineer one hundred percent and have done everything in their power to provide the necessary personnel, money, and equipment. The Directors of the Department of Public Safety have lived up to their promise of cooperation and the Police Department has done much to be helpful. The Mayor and members of City Council, even though faced with a bad financial problem, have been most sympathetic in their support. They appear pleased with the progress made under adverse operational conditions and indicate that ways and means will be found to do the best traffic engineering job possible for Wilmington. This is encouraging and a rather new experience since not once have any of them requested political favors.

Wilmington is fortunate in having the Delaware Safety Council which for years has carried on progressive traffic safety programs and is recognized as one of the most outstanding safety organizations in the country. In addition, the headquarters of the Delaware Chamber of Commerce is in Wilmington. This is a most influential group in civic affairs and have given their whole-hearted support to the traffic engineer. Another bright spot has been the close association with the Delaware State Highway Department.

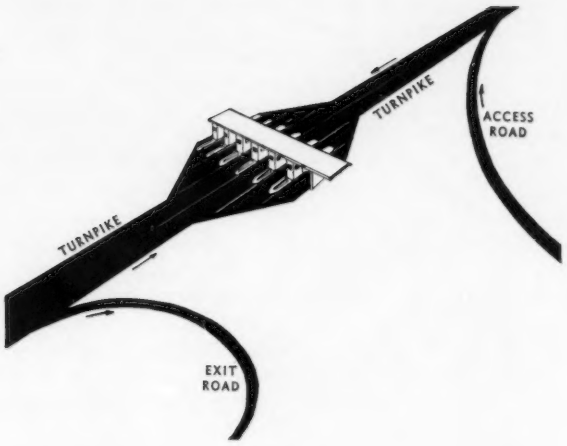
—Photo courtesy of the Philadelphia Evening Bulletin

Fig. 8

Front, Lancaster, Maryland and Madison Streets. Under the present signal operation, the diagonal street and the cross street traffic move on the same phase. This signal installation is soon to be changed to a four-way operation.

Toll Road Trends in the States

By The Editorial Staff



#1 — TYPICAL BARRIER TYPE TOLL ROAD. The toll booths on a barrier road are situated across the main highway. Drivers may enter or leave via free access or exit roads located at various points along the highway.

#2 — TYPICAL INTERCHANGE TYPE TOLL ROAD. The toll booths on an interchange road are located off the main highway, on the combined access and exit road. Drivers cannot enter or leave except on this road, where they must pass through the toll plaza.

The Editorial Staff regularly receives reports regarding legislative and regulatory trends in the various States. This summary, third in a series based on information contained in these reports, describes new developments in the field of toll highway financing and construction.

COLORADO: Bills enacted by the Colorado legislature included a measure authorizing a $16,000,000 revenue bond issue, backed fully by the state's credit, for construction of a toll highway tunnel beneath the Continental Divide.

Under the new enabling legislation, the state legislature would be required to approve final plans for the project by joint resolution, thus necessitating a special session before work would start.

Pledging himself to an all-out effort on the undertaking, Chief State Highway Engineer Mark U. Watrous said he would have a concrete proposal for a tunnel site ready for legislative consideration by some time in July.

CONNECTICUT: Bipartisan agreement on three moves preliminary to reappraisal of the financing plan for Connecticut's cross-state toll expressway was announced by Governor Ribicoff, as follows:

1—That the state legislature be asked to enact legislation to permit awarding of construction contracts committing the state to expenditures in excess of actual cash on hand in the expressway fund. It was estimated this would permit the state to save at least $2,000,000 on interest paid on bonds.

2—That the legislature be asked to support proposed federal legislation to permit the imposition of tolls on highways constructed with federal aid.

3—That the New York engineering firm of Coverdale and Colpitts be retained to prepare a survey of toll revenues from all existing facilities in the state. Results of such a survey would be used as a basis for financing new construction.

The Connecticut expressway financing study committee was set up early this year after Governor Ribicoff expressed concern about present plans for financing the $398,000,000 Greenwich-Killingley Expressway because he had been told the commitment placed on state gasoline tax receipts to back the expressway revenue bonds might jeopardize the state's ability to borrow additional funds for other future highway projects.

An initial $100,000,000 of the state-backed expressway revenue bonds was sold in May, 1954, and it had been planned to sell further issues as required on a similar basis.

FLORIDA: An enabling bill for a state-long toll superhighway which would extend the projected Miami-Fort Pierce turnpike to the Jacksonville area was passed by the Florida Senate and returned to the House for concurrence in minor amendments before going to the governor for signature.

The main turnpike is planned to tie in with the Miami-Fort Pierce "bobtail" pike and go through the center of the state, near Orlando, to Jacksonville. The extension of the bobtail pike is expected to require a $207,000,000 revenue bond issue. The bobtail link, on which work has not yet begun, will take an additional $74,000,000 bond issue, bringing the total cost to $281,000,000.

In another Florida development, Harry Pack of Allendale filed a suit in Circuit Court at Tallahassee charging that State Road Department operation of the Buccaneer Trail is mismanaged and invalid.

Running 13 miles from Fernandina Beach along the Atlantic Coast to the mouth of the St. Johns River, the Buccaneer Trail is a toll road constructed at a cost of $4,-

600,000. Revenue bonds originally issued for the project in 1948 by the Fernandina Port Authority were for a time in technical default until replaced in a 1952 refinancing operation by State Board of Administration bonds carrying a lower interest rate. As part of that deal, the State Road Department agreed to support operation and maintenance of the toll road.

Pack contended in his suit that some $400,000 a year of state gasoline tax funds used by the State Road Department on Buccaneer Trail operational costs and interest payments should have been used solely on free roads in the state. No payment on principal has been made in five years, the suit added, and shortly the annual outlay for the road will be close to $1,000,000. The suit asked that the department be restrained from spending any more gasoline tax money on the toll road or its bonds.

The suit's charge of mismanagement was based on the claim that when additional ferries had to be purchased, secondhand ones were bought at a cost of $175,000. The ferries are so slow, the suit said, that long lines of motorists are held up waiting for their turn, with the result that motorists take other routes to Jacksonville.

Asserting that the department lacks "the authority or ability" to handle the toll facility, the suit also declared that the department is promoting another turnpike which, if placed in operation, would detract from the Buccaneer Trail. This would cause a greater loss than $1,000,000 annually, and total operational costs, principal and interest payments might be as high as $25,000,000 within 30 years, the suit claimed.

Besides contending that the State Road Department lacks authority to divert state gasoline tax money for operation of the toll road, the suit charged that the department is violating the state constitution by making payments on the bonds which, the suit asserted, are not an obligation of the state. It pointed out that the state constitution forbids issuance of state bonds except in time of invasion or insurrection.

Pack also has pending in Circuit Court another suit attaking the constitutionality of the Florida Turnpike Authority.

ILLINOIS: Chairman Evan Howell of the Illinois Toll Highway Commission announced it had been decided to withhold sale of about $400,000,000 in turnpike revenue bonds until the U. S. Supreme Court rules on a suit challenging the constitutionality of the state toll road enabling act.

Contending that owners of land selected for toll road routes would be deprived of their property without due process, a group of property owners appealed to the high tribunal from a ruling by a three-judge Federal Court which rejected their suit. Attorneys for investment bankers have expressed confidence that validity of the pike enabling act can be defended successfully.

IOWA: A bill providing for the creation of a five-member Iowa Toll Road Authority, empowered to finance and construct toll roads, was enacted by the state legislature.

First project contemplated under the measure is a four-lane, 298-mile pike crossing the state from east to west, running parallel to U. S. Highway 6. It would start north of Davenport, pass north of Des Moines and end at Council Bluffs. Engineering studies have indicated such a pike would be feasible by 1959 and could be constructed at a cost approximating $180,000,000.

The bill was amended prior to final legislative approval, however, to stipulate that the Iowa toll road project cannot be started until a neighboring state "has negotiated the sale of revenue bonds to construct a toll road which shall extend to the boundary of Iowa." Illinois is considering such a turnpike.

Other amendments tacked onto the bill: Provided a property tax comparable to that on similar facilities in the local taxing district for any restaurants, service stations and other establishments built by the authority and leased to private operators; added a requirement that the authority build an animal and machinery passage under a toll road for each farm divided by the turnpike; provided that a $75,000 appropriation to start the authority must come from State Highway Commission funds instead of the state general fund; provided that turnpike revenue bonds held by Iowans shall be subject to state income taxes.

KANSAS: A bill enacted by the Kansas legislature gave the State Highway Commission specific authority to cooperate with the State Turnpike Authority in surveys and services.

Rejected by the Kansas solons was a bill which would have required the turnpike agency to set up a reserve account to make payments to local governments in lieu of property taxes.

Meanwhile, authority spokesmen announced that Kansas Turnpike construction contracts are running about 15 per cent below cost estimates. With more than one-eighth of the work on the 236-mile toll superhighway under contract, a saving of about $3,700,000 was achieved from original cost estimates.

Director Gale Moss of the Turnpike Authority stated that all grading and drainage contracts could be let by the end of May or in June, with a start then to be made on paving contracts.

MAINE: Cost of the Maine Turnpike's 55-mile extension from Portland to Augusta, now 94 per cent under contract, is being held to the original estimate of $55,206,000, according to announcement by W. B. Getchell, Jr., executive director of the Maine Turnpike Authority. The original 45-mile pike route from Kittery to Portland cost $20,600,000.

Although construction costs for the extension are running $3,000,000 over estimates, nearly $2,000,000 has been saved on interest charges and a contingency reserve will absorb the rest of the construction cost increase.

Work on the extension is a little behind schedule, Getchell said, but it is believed lost time can be regained and the road will be ready for use in October, as scheduled.

Construction contracts already let total $37,704,900, it was announced, while those remaining to be advertised for bids are garages and administration buildings estimated to cost $2,400,000. This would bring total construction costs to $40,104,900.

MARYLAND: Rejected by the Maryland legislature was a proposal to create a new separate authority independent of the State Roads Commission to finance and construct a proposed $50,000,000 northeastern toll highway from Baltimore to the Pennsylvania and Delaware state lines.

Decision of the solons to place control of the project in the hands of the Roads Commission cleared the way for further planning of the expressway for financing through revenue bonds.

MICHIGAN: A new series of opposition outbursts followed announcement by the Michigan Turnpike Authority of detailed plans for its projected 113-mile, $194,000,000 toll superhighway from Rockford to Saginaw.

Municipalities along the proposed route expressed disapproval of the plans and several cities, including Flint and Dearborn, indicated they would seek legislative action to nullify the 1953 state toll road enabling act. However, such a bill was killed by the State Senate highways committee, which also blocked a proposal to give local communities veto power over the routes of proposed toll roads.

The authority said the plans, drafted by the J. E. Greiner Co., Baltimore, would not be adopted until all municipal and county units represented in the project had a chance to voice their views.

Under the plans, the contemplated pike would run north from a starting point near Flat Rock to an interchange with the Detroit-Toledo expressway, continuing through Allen Park to an interchange with the Detroit-Ann Arbor expressway and through Dearborn to an interchange with Ford Road. From that point it would proceed northwest along the River Rouge Valley to an interchange at Schoolcraft Road and then to an interchange with northwestern highway. It would shift northeast to an interchange with Woodward, southeast of Pontiac; swing east of Pontiac to an interchange with U. S. Highway 24, and then north to an interchange at Artherton Road, east of Flint. It would then swing around Flint to an interchange with U. S. Highway 10, and north to the Saginaw bypass.

Authority Chairman W. E. Slaughter Jr. said it was estimated the project would cost $164,000,000, excluding financing and interest. With the latter added, the total cost would approximate $194,000,000.

Plans call for six restaurants and filling stations at three locations. Sale of revenue bonds for the projects is tentatively planned for October.

MISSOURI: A proposed Missouri toll road enabling act was supported in a resolution adopted by the City Council of Kansas City, which is interested in the possibility it may be financially feasible to include construction of certain parts of the city's expressway program as a part of several tentatively planned turnpikes.

NEBRASKA: A bill to repeal a 1953 law creating the State Turnpike Authority was given initial approval in the Nebraska legislature, with a final vote still awaited at this writing.

NEW JERSEY: An agreement authorizing the development of a plan for a ferry service across Delaware Bay, from Cape May to Lewes, Del., a distance of 13 miles, was approved by the New Jersey Highway Authority. The proposed ferry service would link the authority's Garden State Parkway with the coastal route to Florida and would bypass some 40 miles of congested traffc.

Authority Chairman Orrie de Nooyer emphasized specifically that the agreement does not grant the group a franchise to operate a ferry service, nor does it guarantee that the group would get the franchise after plans had been developed. The agreement binds neither the authority nor the group on subsequent development.

Under the agreement's terms, the authority promises full cooperation in all negotiations connected with the development of a ferry service plan, but the group will foot the bill. It was unofficially estimated the cost would range from $35,000 to $75,000 for a feasibility survey related to operation of a ferry service.

In another action, the authority authorized negotiations for a traffic engineering survey of the feasibility of extending the Garden State Parkway to the New York state line to connect with the New York Thruway. Meanwhile, Governor Meyner and State Highway Commissioner Dwight R. G. Palmer announced approval of arrangements for financing of the widening of a 13-mile toll-free stretch of the Garden State Parkway. This action cleared the way for an early start on widening of the parkway from four to six lanes from Route 22 to the Raritan River Bridge. The federal government agreed to bear half the total cost of from $1,600,000 to $1,800,000. The authority which operates toll-paying portions of the road, agreed to pay the other half of the cost when "excess revenues" are available. In the interim, the authority's share will be advanced by the state.

The New Jersey Turnpike Authority, a separate agency, reported increases in toll collections and revenue from restaurant facilities during the first quarter of 1955. The authority also reported improvements in its quarterly traffic record, with one fatality within that period, according to E. R. Ricker, the agency's traffic engineer. During early April, however, there were three fatalities.

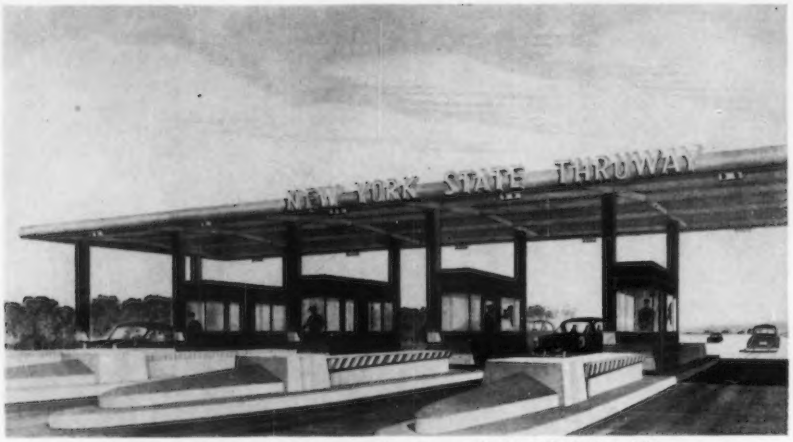
In another New Jersey development, the State Supreme Court held that the Garden State Parkway, a toll facility, is exempt from municipal zoning regulations.

A majority opinion by the high state court rejected an effort by Bloomfield to block the construction of filling station and restaurant areas in a residential section of the municipality.

Enoch R. Needles, engineering consultant to the New Jersey Turnpike Authority, disclosed that major construction contracts thus far awarded on the Essex-Hudson County extension of the New Jersey Turnpike were $2,030,000 below original estimates. Needles said actual contracts awarded on a bid basis up to late March totaled $72,460,000, compared with original estimates of $74,490,000 for the work involved.

NEW YORK: Predicting tentatively that the proposed Long Island Expressway could be a self-supporting toll road, the New York State Thruway Authority said more detailed revenue studies and construction and operating cost analyses would be needed. Conclusions of the agency were based on studies made at its request by the State Public Works Department's Bureau of Highway Planning and by the engineering firm of Madigan-Hyland. The expressway, already authorized by the state legislature, would join Horace Harding Boulevard at the Queens line and provide an artery to the Queens Midtown Tunnel. Some work already has been completed on the section inside the city line.

Deemed impracticable by the authority for construction as toll roads were three potential expressways which would run: From Albany to the Canadian border, with the exception of a 55-mile strip from Albany to Lake George where traffic would be heavier; from the Binghamton-Elmira area north to Watertown and the St. Lawrence River by one of three routes, except for 38 miles from Syracuse to Pulaski; and from Harriman west along the Southern tier to Jamestown.



Artist's conception of a five-lane toll plaza on the New York State Thruway showing cars leaving on the right and entering on the left. Booths are equipped for reversible operation.

In analyzing the proposed Long Island Expressway, the State Public Works Department stated that this route was needed to accommodate and expedite the rapid extension of the New York metropolitan area eastward. It was reported that volumes at the easterly end would be insufficient to amortize the construction cost, but the excess above requirements from the westerly end would appear to be sufficient to very nearly carry the total cost. A detailed study will be necessary to determine the exact length that is wholly feasible.

OKLAHOMA: As part of a plan for a toll superhighway from Kansas City to Houston, Texas, a bill was introduced in the Oklahoma House of Representatives to authorize construction of a turnpike north from the Texas line at Gainesville. The proposed new Oklahoma pike would connect with the Turner Turnpike, with its northern end split into two highways, one approaching Oklahoma City and the other Tulsa. Previously authorized, but not yet financed, is another toll road from Oklahoma City to the Kansas line.

The two contemplated Oklahoma turnpikes would connect with the toll road being built in Kansas from Kansas City through Topeka and Wichita to the Oklahoma border, and with a projected Texas pike running through Dallas to Houston.

A committee substitute bill contained a proposal to pledge revenues from the Turner Turnpike as additional security for bonds of other proposed toll roads. Under the plan, these revenues would be earmarked to help pay off other bond issues after the present turnpike indebtedness is retired.

Turner Turnpike — Oklahoma.

Turner Turnpike revenues now are running far ahead of original expectations, and enough money is anticipated to pay off the bonds ahead of schedule. Under present law, the Turner Turnpike would become a free highway as soon as the bonds are paid off. But under the new proposal, tolls would continue to be collected until bonds on all turnpikes are retired.

The measure further provides that no bonds may be issued to finance the proposed new turnpike to Texas until bonds are issued for financing the southwestern and northern routes, or arrangements have been made for the financing of all three projected pikes. It also would permit the turnpike authority to combine all three of the proposed pikes for the purpose of financing, with revenues to be pledged for retirement of all the bonds. Under present Oklahoma law, separate bond issues are required for each pike constructed.

PENNSYLVANIA: Two enabling bills passed by the Pennsylvania Senate and sent to the House would clear the way for financing and construction of a new east-west extension of the Pennsylvania Turnpike system from Stroudsburg to Sharon and from the western part of the present turnpike to the West Virginia state line.

Construction on the Philadelphia extension of the Pennsylvania Turnpike showing the laying of two twelve-foot lanes of concrete at one time.

The proposed two new extensions would close the circuit of toll express highways within Pennsylvania and link the state's toll highways with five other states when plans are complete.

The Pennsylvania Turnpike already links with the pike being constructed across northern Ohio and a bridge being built over the Delaware River will provide a connection with the New Jersey Turnpike. Previously-enacted legislation authorizes proposed links with New York State and

Maryland. A northeastern extension from near Philadelphia to Scranton is under construction.

TEXAS: Plans were announced for a start in August on actual construction of the Dallas-Fort Worth toll highway if the Texas Supreme Court rules favorably on the proposed $58,500,000 revenue bond issue for the project. The pike will consist of a six-lane divided highway, with three lanes in each direction separated by a median strip ranging from a four-foot wide raised section in urban areas to a 40-foot wide strip in rural areas. The blueprints call for only three major curves. Tentative completion date for the project has been set for April, 1957.

Additional legislative action may be needed to clear the way for the Texas Turnpike Authority to proceed with feasibility studies of additional toll road projects other than the Dallas-Forth Worth pike.

The Texas toll road enabling act passed two years ago specifically authorized the State Highway Commission to advance money for studies of toll road projects to get them started. It prohibited use of bond money for one project for studies of other projects.

Complicating the situation was adoption by the electorate last fall of a state constitutional amendment prohibiting granting of state funds for any toll road project. The state attorney general ruled the amendment did not void the appropriation previously voted for the two years ending August 31, but did prohibit future grants.

VIRGINIA: Selection of a route for the projected Southwest Virginia toll highway was announced by the Old Dominion Turnpike Authority. Chairman S. D. May said the route selected runs 68.8 miles from Glen Lyn, Giles County, through Hillsville. He said the choice was made unanimously from four alternatives proposed after engineers surveyed 30 likely routes. The proposed pike would run near Narrows, Pearisburg, Dublin and Hillsville, May said, adding that consulting engineers now will conduct studies to determine the financial feasibility of the project.

The authority has decided on divided, dual-lane construction for the highway, which would link the West Virginia Turnpike with a proposed pike across North Carolina.

WASHINGTON: After vetoing one clause of the measure, Governor Langlie signed into Washington state law a bill designed to facilitate financing and construction of the $227,000,000 Tacoma-Seattle-Everett toll highway.

He rejected the "lawyers' jaradise clause" requiring the state to pay attorney's fees in some condemnation cases. The deleted section stipulated that in any condemnation case where the property owner was awarded 25 per cent more than the price offered by the state, the attorney's fees would be paid by the state. In explaining his veto, the governor said:

"A provision such as this may, under some circumstances, encourage unnecessary litigation when the acquisition could actually have been settled by negotiation. The provision lends itself readily to the suggestion that a landowner should not settle the matter by negotiation too readily, nor be particularly cooperative, since nothing could be lost by taking the matter to court. This litigation could add tremendously to the interest and financing charges accruing on the bonds."

WEST VIRGINIA: A contract with Air Survey Corp. for aerial surveys of a possible West Virginia Turnpike extension route between Charleston and Parkersburg was approved by the State Turnpike Commission. Commission Chairman A. Garnett Thompson said an agreement had been reached earlier with the State Road Commission relative to cost of the survey work.

FLORIDA

State Road Department Highway Planning Program

Limited number permanent positions open for experienced highway planning personnel for work in following classifications and pay scales.

Senior Designers	**6000 - 7200**
Traffic Engineers	**6000 - 7200**
Planning Engineers	**6000 - 7200**
Cartographer	**5300 - 6600**
Designers	**4800 - 6000**
Draftsmen	**3600 - 4800**

Only those with excellent qualifications and experience need apply. Experience necessary in one or more of following classifications:
Urban street design; expressway design; rural highway design; comprehensive traffic studies and analysis; engineering cost analysis; long range highway planning; drafting pertaining to contract plan preparation for rural and municipal highway projects.

Positions open in Tallahassee, Chipley, Bartow, Lake City, Fort Lauderdale, DeLand and Daytona Beach. Excellent working conditions; retirement plan, sick leave with pay, paid vacations, hospitalization plan available. Apply to State Highway Engineer, State Road Department, Tallahassee, Florida.

it's the NET that counts!

Not how much your meters take in . . .
But how much your City takes in!

For that all-important net revenue, your total parking meter income must be balanced against:

INSTALLATION COST: New installations or replacements, Karparks are installed easily and quickly

MAINTENANCE COST: Rugged Karpark construction assures maximum protection against vandalism, collision and the elements. Interchangeable mechanism for fast repairs without down time. Time limit changes handled on the spot without the services of skilled technicians.

ENFORCEMENT COST: Highly visible Karpark dial makes police officer's job faster, easier. Completely accurate, entirely automatic Karparks keep driver complaints and disputes to a minimum.

COLLECTION COSTS: Karparks are available with automatic dump systems, sealable boxes or open top boxes, with coin combinations and time intervals tailored to your needs. Twin-O-Matics provide two-space collections in one operation. All Karparks are virtually tamper-proof.

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KARPARK TWIN-O-MATIC

Times two cars with one installation. Adjusts to any desired change in regulations. Reduces maintenance and collection costs to unheard-of lows. Ruggedly built for long life.

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For single car parking. Can be used for an entire system of single car parking, or, when used with Twin-O-Matic, can be placed at street ends and special single locations.

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KARPARK CORPORATION
Cincinnati 6, Ohio

IN CANADA
TWIN METER CO. OF CANADA LTD.
5002 Park Avenue
Montreal 8, Quebec

TRAFFIC NEWS

Institute Announces Awards for 1954

Ten American cities and six states have been cited by the Institute of Traffic Engineers for "outstanding achievement in traffic engineering in 1954." Plaques will be awarded to the winners for "engineering programs deserving national recognition," according to Harry Porter, Jr., Institute President and Senior Traffic Engineer, for the National Safety Council.

States and cities selected for awards have demonstrated that traffic facilitation and control, coupled with good law enforcement and public education, will ease congestion, which is so irritating to the millions of motorists on our streets and highways. Free and smooth movement is an economic necessity in our nation. It is the responsibility of every city and state to move traffic wisely, by the application of good basic engineering, for then traffic is moved more safely.

The committee of judges, all members of the Institute of Traffic Engineers, included: Maxwell Halsey, executive director, Michigan State Safety Commission, chairman; Charles A. Goodwin, traffic and transportation engineer, Liberty Mutual Insurance Company; Light B. Yost, director of field operations, General Motors Corporation; Bryan Wilson, traffic engineer, Wisconsin division, American Automobile Association; Edward R. Klamm, manager, accident prevention division, Allstate Insurance Company; and Charles W. Prisk, highway transport research engineer, Bureau of Public Roads.

The awards for states were decided in four regional groups and a fifth group including the eight most thickly populated and heavily trafficked states. The awards are as follows:

GROUP I — Eastern Region — First Place, Massachusetts; Second Place, a tie between Connecticut and Maryland.

GROUP II—Southern Region—First Place, Virginia; Second Place, Florida.

GROUP III—Midwest Region—First Place, Minnesota; Second Place, Oklahoma.

GROUP IV—Western Region—First Place, Oregon; Second Place, Washington.

GROUP V—Heavily Populated and Trafficked States — A duplicate First Place, Michigan and California; Second Place, Texas.

The winning cities and second places are:

GROUP I—For population of 1,000,000 and over, First Place, Chicago; Second Place, a tie between Detroit and Los Angeles.

GROUP II—For population of 750,000 to 1,000,000—First Place, Washington D. C.; Second Place, Cleveland.

GROUP III—For population of 500,000 to 750,000—First Place, Cincinnati; Second Place, Milwaukee.

GROUP IV—For population of 350,000 to 500,000—First Place, Denver; Second Place, Portland.

GROUP V—For population of 200,000 to 350,000—First Place, Rochester, N. Y.; Second Place, Providence, R. I.

GROUP VI—For population of 100,000 to 200,000—First Place, Pasadena, Calif.; Second Place, Phoenix, Ariz.

GROUP VII—For population of 50,000 to 100,000—First Place, Hammond, Ind.; Second Place, Evanston, Ill.

GROUP VIII—For population of 25,000 to 50,000 — First Place, Wausau, Wis.; Second Place, Miami Beach, Fla.

GROUP IX—For population of 10,000 to 25,000—Duplicate First Place, Two Rivers, Wis., and Wilmette. Ill.; Second Place, Rocky River, Ohio.

Bob Hope Lends Talents to Highway Safety Cause

The voice of Bob Hope—so familiar to most Americans—is featured in the sound track of "Chain Reaction," a new 15-minute black-and-white movie on highway safety and courtesy produced by the American Transit Association. Mr. Hope (center) is shown after he had been presented with a silver medallion by the Association in appreciation of his contribution of the narration for the film. He is flanked by Donald C. Hyde (left), president of ATA and general manager of Cleveland Transit System, and George W. Anderson, executive vice-president of ATA. Prints of "Chain Reaction" are now being offered to ATA member companies for showings before civic clubs, business organizations, PTA's, high school assemblies, women's clubs, lodges, etc. Further information may be obtained from local transit companies or from the American Transit Association, 292 Madison Avenue, New York 17, N. Y.

New Appointments . . .

May Appointed Assistant Secretary

Adolf D. May, Jr. (Jr. Mem., ITE), has been named Assistant Secretary, a new position recently established by the Board of Direction of the Institute of Traffic Engineers. Mr. May will work under the direction of the Executive Secretary, M. Mansfield Todd, and will assist with all phases of Institute work with particular emphasis to the TRAFFIC ENGINEERING Magazine.

Adolf D. May, Jr.

Following his graduation from Little Rock High School in 1945, he served in the United States Navy Air Corps for two and one-half years, during which part of the time was spent in studying at Colorado College in Colorado Springs. After his discharge from the Navy, Mr. May attended Southern Methodist University in Dallas, Texas, where he received his Bachelor of Science Degree in Civil Engineering in 1949. The following year was spent at Iowa State College where he received his Master of Science Degree in Civil Engineering. In the fall of 1950, Mr. May accepted a research position with the Joint Highway Research Project at Purdue University during which time he was Survey Director of two origin and destination traffic surveys, and he also continued work on his Doctorate Degree. After completing the requirements for his Doctorate Degree with the exception of his dissertation, he accepted the position of Assistant Professor of Civil Engineering at Clarkson College of Technology located in Potsdam, New York, in September, 1952. At Clarkson, Mr. May was in charge of undergraduate and graduate courses pertaining to highway and traffic engineering. He has recently been promoted to the rank of an Associate Professor of Civil Engineering. In January of this year Mr. May received his Doctorate Degree from Purdue University.

His interest in highway and traffic engineering was first stimulated by the fact his father is a Civil Engineer and also that during high school he worked several summers with the Arkansas Highway Department in a field survey party. His attraction to the highway field was further focused by part-time work with the Texas Highway Department during his academic work at Southern Methodist University.

In addition to being a Junior member of the Institute, Mr. May is active in

Rothrock Appointed To Newly Created Position In Ohio

Claude A. Rothrock (Mem., ITE), has accepted the position of Engineer of Preliminary Location and Design with the State of Ohio Department of Highways. This is a newly created post and his duties will be to evaluate proposed construction projects, set up standards, determine tentative locations, and direct preliminary design.

Claude A. Rothrock

Rothrock had previously been with the West Virginia State Road Commission for over 20 years. His most recent assignment in West Virginia was that of State Planning Engineer in full charge of planning division, traffic inventory, and financial and special projects section. He is a registered professional civil engineer in the State of West Virginia.

He has been active in the Highway Research Board and the American Association of State Highway Officials by participation on committees and by the presentation of technical papers.

Rothrock received the Highway Research Board award for the best paper given at the 1954 meeting. The title of this particular paper was "Urban Congestion Index." His essay submitted in the Better Highways Awards Program sponsored by General Motors in early 1953 won the third place prize.

Shuttleworth With Buffalo Steel Corporation

G. E. Shuttleworth (Assoc. Mem., ITE) was recently appointed to the position of Sales Manager, Post Division of the Buffalo Steel Corporation.

Shuttleworth, a native of Michigan, was graduated from Cass Technical High School of Detroit. In 1942 he completed a short course on Traffic Safety Engineering at Yale University. He was affiliated with the Michigan State Highway Department as an engineer on road surveys from 1935 to 1942. At this time he was transferred to head a section of the newly-formed Traffic Safety Division, and he remained in that capacity until 1948, with the exception of the time spent with the U. S. Army Ordnance in Europe during World War II.

G. E. Shuttleworth

From 1948 until his recent resignation, Mr. Shuttleworth was General Sales Manager of the Hunt Company of Detroit, Michigan, in charge of Sales and Engineering. He is a member of the Michigan Engineering Society.

the Highway Research Board, American Society for Engineering Education, Honorary Research Society of Sigma Xi, and Tau Beta Pi Honorary Scholastic Society. He has presented papers before the Highway Research Board, The American Association of State Highway Officials, and the Purdue Road School.

Mr. May is working full time in New Haven this summer with the Institute, but will return to Clarkson College of Technology in September where he will continue to teach and in addition will work part-time with the Institute during the academic year. Next summer when the Headquarters of the Institute is moved he will resign his Clarkson connection for full time employment with the Institute and will move his wife Margaret, and their four children to Washington.

Charles R. Waters Retires

Charles R. Waters, District Engineer for the New York State Department of Public Works at Buffalo for nearly thirty years, will retire from that position on July 1, 1955. He expects to continue in highway engineering and transportation fields, and may open an office for the practice of Professional Engineering.

Previous to being District Engineer, he was a Deputy in the office of the State Engineer and Surveyor at Albany, and earlier he was engineer-in-charge of highway and canal construction projects. He is a graduate of Union College, Schenectady, New York, and in 1952 his Alma Mater granted him an honorary degree of Doctor of Engineering. In 1954 he received the Roy W. Crum Award from the Highway Research Board at Washington, D. C., and he has also received Awards of Achievement from the local Society of Professional Engineers and the Technical Societies Council of the Niagara Frontier.

Mr. Waters has specialized in concrete and asphaltic pavement construction; in arterial planning in cities; in the design, manufacturing and reconditioning of highway signs, and in the subject of uniformity throughout the United States of signs and pavement markings for streets and highways.

He has been a full member of the Institute of Traffic Engineers since 1949, and has written a number of papers and articles which have appeared in the TRAFFIC ENGINEERING magazine.

H. S. Fairbank Retires

Herbert S. Fairbank, Deputy Commissioner in Charge of Research, Bureau of Public Roads, Department of Commerce, recently retired for reasons of health. His long and distinguished career has been characterized by single-minded devotion to the public interest, his most outstanding contributions having dealt with the planning and financing of a highway system adequate to the Nation's needs.

Mr. Fairbank is a native of Baltimore, Maryland. He graduated from Cornell University in 1910 and except for a few months following graduation and military service as a commissioned officer in World War I, his entire professional career has been with the Bureau of Public Roads.

Every major report issued or participated in by the Bureau for many years back bears the imprint of his unusual capacity to assemble and interpret the basic facts which govern highway progress and development. His authoritative writings have touched upon almost every phase of highway planning and construction. His recommendations have influenced many important features of highway legislation.

As head of the research work of the Bureau of Public Roads since 1943, Mr. Fairbank has sought to direct and coordinate the various investigations in such manner that major highway problems will be solved. The far reaching results of this work are reflected in improvements in construction methods, new approaches in analyzing traffic problems, particularly those of metropolitan areas, and a broader outlook on the entire highway network and the extent to which each part requires improvement.

In 1947, Mr. Fairbank received the George S. Bartlett Award for outstanding contributions to highway progress, considered to be the highest honor in the highway field. He received the Department of Commerce Exceptional Service Award in 1950. In 1953, he received the Roy W. Crum Award for distinguished service, presented annually in recognition of "outstanding achievement in the field of highway research."

Mr. Fairbank was a delegate to the International Road Congress held in Munich in 1934. In 1949, he served as Vice-Chairman of the U. S. Delegation to the United Nations Convention on Road and Motor Transport in Geneva, Switzerland.

He is Chairman of the Department of Economics, Finance, and Administration of the Highway Research Board.

Honorary Member of Institute Receives NSPE Award

Dr. Andrey A. Potter, Dean Emeritus of Engineering at Purdue University, received the annual award for meritorious service from the National Society of Professional Engineers at their annannual meeting held June 4 in Philadelphia.

He was selected for the award because of "his inspired teaching and sympathetic encouragement of individual students of engineering, his wise counsel in the field of engineering education, his leadership in raising the status of the profession, and his manifold services to the Nation," according to President Clarence T. Schoch, who presented Dr. Potter with an inscribed plaque.

Dr. Potter was the seventh internationally prominent individual in the history of the Institute of Traffic Engineers, who was elected to Honorary membership. Prior to his election to honorary membership in 1948, he presented a paper at the Nineteenth Annual Meeting of the Institute entitled, "The President's Highway Safety Conference in Relation to the City Traffic Engineers." In the paper he stressed the importance of the traffic engineer in the highway safety program and advocated that all cities with a population over 50,000 should have a competent full-time traffic engineer. He also emphasized that engineering colleges should insure an adequate flow of graduates in this field.

The presentation of the NSPE Award on June 4 was one of the highlights of the three-day annual meeting and occurred at the National Society's Annual banquet at the Bellevue-Stratford Hotel.

HENRY MEETS MULE'S HEAD FIRST CITIZEN

By Bryan Wilson
Traffic Engineer, Wisconsin Division AAA

Henry Glausson, Traffic Engineer of Mule's Head, population 73,000, was waiting for the ink to dry so that he could resume his tracing of a beautiful and complex system of islands to channelize traffic at the intersection of Merritt and Main Streets. Meantime, his eyes wandered to the lissome figure of Miss Willis, his secretary and fiancee, as she flitted from her desk to the filing cases. A mathematician's dream, thought Henry, his eyes taking her curves at 60 MPH, and soon she would be all his! He drank in her full, sensitive lips. Gad! Enough sweetness there to last a man a reasonable lifetime if he were careful!

But these reveries were abruptly ended by the appearance of the Mayor, who hurried to Henry's desk. "Henry, I just looked out of my office window and saw the great W. G. Gigglesby and his stooge, Silas Liechen, coming into the building. You've heard of this unwholesome pairsome, but to really appreciate how unpleasant they are you have to meet them," said the Mayor, rapidly. "I think they're headed for your office. Please don't lose your temper, but just coddle them along. I hate their guts, but have to endure them, as old W. G. is a powerful man in the state and a tough old cooky to buck. Remember, I'm backing you, but at least be courteous."

He smiled at Henry's nod of understanding and hastily departed by a rear door.

An instant later, Henry's visitors appeared in the doorway to the main corridor. "Mr. Glausson, I presume," said one of the men, unctuously. "I am Mr. Silas Liechen, attorney and personal secretary to the Honorable W. G. Gigglesby, whip of the good old Republican party in the State Senate, President Emeritus of dear old Falcon University, President of the Mule's Head Mortgage Company, President of the First National Bank of Mule's Head, President of the Association for a Bigger Mule's Head, and owner of the best and biggest grocery and dry goods stores in the city. Mr. Glausson, I give you the Honorable Mr. W. G. Gigglesby!" Mr. Liechen's voice had risen from the muted 3-4 time of the cachuca to the cacophony of a full orchestra in 4-4 time, and the walls of the little office shuddered to the thrilling cadenza.

"I'm delighted to meet you, gentlemen," fibbed Henry, holding out his hand, which was ignored by both gentlemen, and looked with interest at the small, colorless man who was all these things.

"Mr. Glausson's lying, Silas," Mr. Gigglesby observed sententiously. "He doesn't feel any pleasure at meeting me, because his spies have probably informed him of the purpose of this visit. Glausson, I'm going to be frank with you. I'm highly displeased with the way you've gummed up traffic in this town. I resent your making a traffic laboratory of Mule's Head. I think the Mayor hired a boy to do a man's work when he engaged you. This town isn't large enough for the services of even a good traffic engineer, if there is such a specimen. I know engineers—have hired and fired as many as I've got fingers and toes. Always found them a conceited, ignorant bunch—no loyalty, no originality, no stabilty, no social graces. Only the rudiments of education — a little math, a little dexterity with a slide rule, a little drafting ability." He paused for breath and glared at Henry, who had been nodding politely at each thrust.

"I'm sorry you don't like engineers, sir," said Henry.

"I've had my eye on you just as much as on the other incompetent employees of this city, and just because I've been silent up to now is no sign I've liked or approved your giddy doings," continued the Honorable Mr. Gigglesby. "You may not know it, boy, but I run this town. Hardly a city employee, and that includes the Council, that doesn't owe me money. All of 'em up to their necks in debt! Silas, tell him what we want!" and the great man turned away and began playing with his heavy watch chain.

The lawyer adjusted his steel-rimmed spectacles and eyed Henry severely over them. He folded his long, slender hands. "Mr. Glausson," he began, "it's unfortunate that you have offended W. G., but perhaps you can make amends. Like W. G., I dislike engineers, but I am willing to give the devil his due. In brief, W. G. dislikes the way in which you have upset the pleasant traffic pattern of this city. Now, let's consider for the moment your latest error—the one-way street system involving Newton Avenue and Seventeenth Street. Remember, you don't have to answer any questions here which might incriminate you, and you have the privilege of securing counsel."

Henry smiled. "I hardly think it necessary at this stage to hire counsel. Please proceed."

"Mr Glausson," said the lawyer, "it was reported in the paper that you state a one-way street couplet making use of two city streets is, in reality, only **one** street, which instead of a 4-inch center line or a conventional medial island to divide opposing lanes of traffic, actually has a medial divider a block in width. Is that true?"

"Substantially," admitted Henry, "you see—"

"You have answered affirmatively," stated Mr. Liechen. "You have admitted in the presence of witnesses that you have actually taken what formerly were two normal streets which carried two-way traffic and made of them **ONE** street separated by a medial divider of one block in width. In other words, you have reduced the number of North-South streets in this city by one. Instead of adding more sadly needed streets in this city, you have had the unadulterated gall and lack of judgment to actually take away a street! Ah, you engineers! no judgment, no real profession! Just a slight knowledge of measuring lines and angles which any intelligent child of five could master in a few easy lessons! How do you account for such ignorance?"

"Now, look here," began Henry, "I—"

"Cut out the heroics!" thundered W. G. "You have stated that you took two normal streets and made of them, for all practical purposes, only ONE street! When it is admitted by everyone that we need more streets so badly you have taken one away from us. How silly can you get? Also, the tenants of some of my stores on Newton Avenue complain that whereas when that street was two-way, workers on their way home stopped and bought groceries and other staples. Now, that the street is one-way, the workers pass these stores in the morning, but in the evening are forced to return home by way of Seventeenth Street. It's a well-known fact that workers don't buy on their way to work, but on their way home after work! Deny that, if you can!"

Henry waited until he had counted a hundred before replying. Always, in moments of stress, he had found that the brief interlude calmed him. Besides, it didn't take long because his way of counting a hundred was to say mentally: "Ninety-nine cows and a bobtailed bull."

"Mr. Gigglesby," said Henry, picking his words carefully, "in anticipation of some such statement by merchants along these two one-way streets, I have made a complete check as to whether they have lost or gained customers. When pinned down to actual facts, the merchants on Newton Street reluctantly admitted that instead of losing customers there had actually been a slight gain. On Seventeenth Street, where, I understand, you also own some stores, and where, formerly, the greatest congestion was experienced, I found unanimous approval of the one-way street system. Some businessmen even claimed that it was so annoying to drive on this heavily congested street before it was made one-way that people had quit trading there at all, but, instead, had gone out to the shopping centers where it was easy to drive and to find a parking space."

W. G. wrinkled his forehead ferociously and thought visibly. "Well, that may be true. The idiot that did most of the complaining to me hasn't paid his rent for three months and could have used loss of business as an alibi for future failures to pay it," said W. G., "but I still don't like it personally! And don't get the idea that I like you! You're just like all these young idiots the colleges are grinding out. Think you can teach men like myself who are old enough to be your grandpappies how to suck eggs. Idiots! All of you!"

"Shall we mention the other idea you had for greater safety, W. G.?" inquired Liechen, fawningly.

"Go ahead," said W. G. "Do something for the money I'm paying you. Giving you three times what you're worth, you lunkhead! A year in the woods with a broadaxe hewing railroad ties is what you need except you probably couldn't hit a bull in the rear with a spade." And W. G. doubled up with a shrill cackling at his thrust.

"Glausson," began the lawyer, pacing back and forth with his hands clasped reflectively behind him, "W. G. had a wonderful idea the other day. One that will insure greater safety to the good people of this city. W. G. believes that stop signs should be erected at each of the four approaches at all signalized intersections in the city."

"Do you mean these for use after the signals have been put on flashing after midnight, sir?," asked Henry, turning to W. G.

"No, Lunkhead," barked W. G., "I mean that every car approaching the intersection from any direction, while the signals are working must stop when the green light is showing and wait through the cycle until the next green interval before proceeding across the intersection. This will give pedestrians a chance and reduce accidents between vehicles."

Henry winced, blinked rapidly to

HENRY GLAUSSON CONTEST

Here is your opportunity of exercising your creative instinct and ingenuity. All you have to do is to write an interesting episode in the life of Henry Glausson. You have followed Henry from his fan mail to his love life and to his encounters with the City Council and private Citizens. What lies ahead for Henry is up to you! You could make his life most interesting! This is your chance to get Rich and be in the limelight.

Rules of the Contest

1. The contest is open to members of the Institute of Traffic Engineers only.
2. The contest begins August 15, 1955 and closes October 15, 1955.
3. The episode should be typed and double-spaced and should contain approximately 1200 to 2000 words.
4. A Board of Judges will decide the outcome of the contest, and a $10.00 prize, contributed by Bryan Wilson, will be given at the Annual Meeting in Pittsburgh to the author of the best episode.

ITE Sustaining Organizations

A'G'A Division of Elastic Stop Nut Corporation of America
1027 Newark Avenue, Elizabeth 3, New Jersey
Attention Mr. Irving J. Mack
Sustaining Organization Representative

American Transit Association
292 Madison Avenue, New York 17, New York
Attention Mr. George W. Anderson
Sustaining Organization Representative

Automatic Signal Division, Eastern Industries, Inc.
Regent Street, East Norwalk, Connecticut
Attention Mr. Paul L. Green
Sustaining Organization Representative

California Metal Enameling Company
6904 East Slauson Avenue, Los Angeles 22, California
Attention Mr. Standish K. Penton
Sustaining Organization Representative

Crouse-Hinds Company
Wolf & Seventh North Street, Syracuse, New York
Attention Mr. Kenneth W. Mackall
Sustaining Organization Representative

General Electric Company
920 Western Avenue, Lynn, Massachusetts
Attention Mr. D. T. Carter
Sustaining Organization Representative

The Grote Manufacturing Company, Inc.
Bellevue, Kentucky
Attention Mr. W. E. Miles
Sustaining Organization Representative

Hawkins-Hawkins Company, Inc.
1255 East Shore Highway, Berkeley 10, California
Attention Mr. Norman L. Hawkins, Jr.
Sustaining Organization Representative

Lyle Signs, Inc.
2720 University Avenue, S. E., Minneapolis, Minnesota
Attention Mr. R. H. Bjorklund
Sustaining Organization Representative

(Continued on page 412)

clear away the cobwebs. "Sir, the matter will be given study," said Henry.

"Study!" scoffed W. G., "It takes brains to do that and any thinking you'd try would be just a sort of mental master—" W. G. glanced at Miss Willis, at Liechen's nudge, and continued, "be just boyish nonsense. Come on, Silas. Gotta get down to the bank and see about some mortgage foreclosures."

"Good day, gentlemen," called Henry as they swiftly departed. There was no reply.

Henry staggered weakly to his drawing table and rested his head in his hands. Miss Willis crept over and stood sympathetically by him.

"Alice," said Henry bitterly, "I always thought that Diogones, Neitsche, Schoepenhaur and the other cynics were that way because of sour stomachs. I was wrong. Now I know the real reason."

Miss Willis took Henry's hand and squeezed it gently. "I always thought it was because they were disappointed in love," she said, coyly.

"No," said Henry postively. "The reason was that they were all traffic engineers! Every confounded one of them was a traffic engineer!"

ITE SUSTAINING ORGANIZATIONS
(Continued from page 411)

Magee-Hale Park-O-Meter Company
Commerce Exchange Building Oklahoma City 2, Oklahoma
Attention Mr. G. A. Hale
Sustaining Organization Representative

The Marbelite Company, Inc.
27 Warren Street New York 7, New York
Attention Mr. William E. Lenz
Sustaining Organization Representative

Minnesota Mining & Manufacturing Company
900 Fauquier Avenue St. Paul 6, Minnesota
Attention Mr. Donald O. Opstad
Sustaining Organization Representative

Miro-Flex Company, Inc.
1824 East Second Street Wichita, Kansas
Attention Mr. H. N. Carver
Sustaining Organization Representative

Portable Traffic Signals, Inc.
146 West 21st Street Los Angeles 7, California
Attention Mr. W. W. Taylor
Sustaining Organization Representative

Prismo Safety Corporation
Huntingdon Pennsylvania
Attention Mr. John C. Horn
Sustaining Organization Representative

Revere Corporation of America
Wallingford Connecticut
Attention Mr. Walter K. Davies
Sustaining Organization Representative

The Streeter-Amet Company
4101 North Ravenswood Avenue Chicago 13, Illinois
Attention Mr. George F. Graham
Sustaining Organization Representative

Traffic and Street Sign Company
84 Foundry Street Newark 5, New Jersey
Attention Mr. William H. Spurgeon
Sustaining Organization Representative

Tuthill Spring Company
760 Polk Street Chicago 7, Illinois
Attention Mr. H. T. Moore
Sustaining Organization Representative

Union Metal Manufacturing Company
1432 Maple Avenue, N. E. Canton 5, Ohio
Attention Mr. W. A. Porterfield
Sustaining Organization Representative

U. S. Porcelain Enamel Company
4635 East 52nd Drive Los Angeles 22, California
Attention Mr. J. L. Hodgkinson
Sustaining Organization Representative

The Verda-A-Ray Corporation
615 Front Street Toledo 5, Ohio
Attention Mr. H. E. Cohane
Sustaining Organization Representative

Wald Industries, Inc.
301 Penn Street Huntingdon, Pennsylvania
Attention Mr. John R. Wald, Jr.
Sustaining Organization Representative

Director Sielski Author of Paper

Matt Sielski (Member, ITE) has again shown his editorial abilities by having an article entitled "Highway Gimmicks" published in the recent May issue of *Public Safety* Magazine. Mr. Sielski is presently the Director of the Safety and Traffic Engineering Department of the Chicago Motor Club, and in addition is a member of the Board of Direction of the Institute of Traffic Engineers.

The article gives a resume of new design feature now being incorporated on our most recently constructed expressways and turnpikes. The sign on the Philadelphia extension of the Pennsylvania Turnpike which "sniffs out the weather," the fan arrangement on the New Jersey Turnpike "to blow weather away," the landscaping on the Eden Expressway "to absorb noise," and the colored concrete on the Calumet Expressway for acceleration and deceleration lanes, are a few of the devices which he describes. He also includes such schemes as the singing shoulders, reflecting curbs, headlight glare interceptors, warning lights for fog, accidents, etc.; as well as a proposed development on the Ohio Turnpike which places the eastbound lanes on the north side of the westbound lanes. In this way the motorists can stop at service stations located in the median strip without crossing the high-speed traffic lane, and at the same time places the opposing high speed lanes further apart.

Mr. Sielski points out that these are only a few of the devices that are being developed, and if successful will be incorporated in many more miles of our highway system.

Report of June Meeting of Board of Direction

The Board of Direction of the Institute of Traffic Engineers met in the Dinkler-Plaza Hotel in Atlanta, Georgia, on June 10 and 11, 1955, with ten members present. Director Sielski was unable to attend due to other engagements. The Board met for seven hours on Friday and four hours on Saturday. Important actions taken by the Board include:

1. Approval of the awards for the 10 cities and six states for outstanding traffic engineering performance during 1954.

2. Appointment of Adolf D. May, Jr., as Assistant Secretary of the Institute of Traffic Engineers. (Additional information appears elsewhere in this issue.)

3. Established a Board Staff Personnel Committee consisting of the Secretary-Treasurer and two Board members to advise the Board and Staff relative to personnel and operation problems.

4. Selected Washington, D. C., as the permanent site for Institute National Headquarters with the relocation to be made about July 1, 1956.

5. Authorized the Executive Secretary and Vice-President Prisk to enter negotiations with the National Society of Professional Engineers for office space in their new office building which is now being constructed in Washington at 2029 K Street, N. W.

6. Agreed that capital expenditure caused by moving the Institute headquarters to Washington, D. C., be borrowed from the Fee Fund, (By-Laws, Article IV, Sec. 8), to be repaid with interest over a period of years.

7. Authorized the Executive Secretary to proceed to notify the advertisers of the magazine that effective January 1, 1956, the advertising rate will be increased.

8. Revised the 1955 budget from anticipated revenue of $51,000 to $51,700, from which $50,910 rather than $47,800 of expenditures are to be paid.

9. Requested the Policy Committee to arrange a conference of all past and present officers and directors on October 21 and 22, 1955, at the William Penn Hotel, Pittsburgh, Pennsylvania. The purpose of the conference would be to explore changes in traffic engineering that may be anticipated in the next 10 to 15 years.

10. Requested that a committee of Messrs. McNeil, McMonagle, and Prisk investigate the purchase of building fund bonds of the National Society of Professional Engineers.

11. Received a report from the Executive Secretary that the new style small size lapel insignia pin was now available, and that proper announcement would be made to the membership.

12. Invited the Hawkins-Hawkins Company, Inc., of Berkeley, California, and the Verd-A-Ray Corporation of Toledo, Ohio, to become Sustaining Organizations.

13. Directed the Executive Secretary to cancel the membership of two members who were delinquent in their 1954 dues, and accepted the resignations of four members.

14. Approved the transfer of 19 Juniors to Associate, and of 15 Associates to full Member. Elected to membership, 35 Juniors, 20 Associates, 1 full Member, and 1 Affiliate, thereby increasing the total membership to 909.

15. Extended invitation to the membership committee and any newly designated members of this committee to meet with the board on October 23, for the purpose of discussing membership application problems.

16. Received from Past-President McNeil, a verbal report on the plans for the 1955 Annual Meeting in Pittsburgh.

17. Requested that the problems pertaining to the Biscuit Banter Breakfast be made the subject of discussion on the agenda of the next Annual Business Meeting at Pittsburgh, October 24, 1955.

18. Requested that Mr. Wetzel further study the functions and objectives of the Engineers Joint Council, and the Engineers' Council for Professional Development, to evaluate whether our affiliation with either or both organizations would be mutually advantageous.

19. Received from Mr. Havenner a verbal report on the preliminary plans for the 1956 Annual Meeting which is to be held in San Francisco; approved the appointment of recommended Local Arrangements Committee personnel headed by General Chairman Bob Glenn with Jeremiah O'Shea and Ross Shoaf as Vice-Chairmen.

20. Approved the proposed amendment to the Constitution and By-Laws of the Canadian Section relative to Section Affiliates.

21. Authorized the formation of an Ohio Section of the Institute of Traffic Engineers effective June 11, 1955.

22. Received a report that as of April 30, 1955, 6,638 copies of the Traffic Engineering Handbook had been distributed from which the Institute has realized a profit of $3,519.01.

23. Received report that there are 276 paid subscribers to the Traffic Engineers' Technical Notebook who have received the supplements for this year ending September 30, 1955. A supplement was issued last winter and another was distributed in April.

24. Received report from the Technical Council of the activities of the committees and the tentative plans of the technical sessions to be held at the Annual Meeting in October.

25. Recognized as Founder Societies for purposes of membership procedure, organizations which are members of the Engineers' Joint Council, and Engineers' Council for Professional Development, with one exception.

26. Authorized the travel of the Executive Secretary to attend the Annual Western Section Meeting of the Institute of Traffic Engineers held in San Diego, California, June 22-24, 1955.

27. Scheduled the next Board meeting for October 23, 1955, in Pittsburgh, Pennsylvania.

T. J. SEBURN
Secretary-Treasurer

LOOKING AHEAD

SEPTEMBER 8-10—JACKSON LAKE LODGE, WYOMING
Annual Conference of Western Association of State Highway Officials.

SEPTEMBER 12-14—GATLINBURG, TENN.
Annual national highway conference for County Engineers and Officials.

SEPTEMBER 25-29—MONTREAL, CANADA
Annual meeting of American Association for Planning Officials.

SEPTEMBER 26-29—ROCHESTER, NEW YORK
Annual meeting of the International Municipal Signal Association.

SEPTEMBER 26-29—BOSTON, MASSACHUSETTS
Annual convention of the American Transit Association.

OCTOBER 2-6—PHILADELPHIA, PA.
Annual conference of the International Association of Chiefs of Police.

OCTOBER 4-7—COLUMBUS, OHIO
Annual Ohio Short Course on Roadside Development.

OCTOBER 25-27—PITTSBURGH, PA.
Founders' Twenty-fifth Birthday Meeting of the Institute of Traffic Engineers, William Penn Hotel.

Strictly Business

Mr. E. E. Lewarch, City Traffic Engineer of Seattle, Washington, points to three phase volume-density controller used in connection with radar vehicle detectors. Two of the detector units used at the intersection, the first installation of its kind, can be seen in the upper right.

Seattle Uses Radar Controlled Traffic Signal At Major Intersection

Seattle is one of the first cities in the world to use radar detectors to control a volume density traffic signal controller on a permanent installation. These radar detector units were installed by the Traffic Engineering Division at 4th Avenue, S. and Airport Way.

City Traffic Engineer, E. E. Lewarch, states that the Radar Speed Meter has been in use for several years as a speed control device, but the use of radar to actuate a traffic signal controller at an intersection is something new in traffic control. Each traffic movement at this intersection will be controlled by a separate detector unit mounted over its respective traffic lane. As each moving vehicle comes into the detection area under these units, the microwaves are reflected back from the vehicle to the detector. This reflected beam then registers a vehicle movement and is transmitted to the electronic "Brain" in the traffic signal controller.

Seattle has traffic actuated signals at 41 intersections, controlled by the volume of traffic passing over pressure pads or magnetic detectors installed in the street approaching the intersection, or by pedestrian push button controls. The installing of pressure pads or magnetic detectors in the street at 4th Avenue, S. and Airport Way would be impractical because it would necessitate excavating pavement on the bridge structure, and the effective range is limited to the immediate vicinity of the pressure pads.

By incorporating the magic eye of radar into the traffic control system, all components of the system have been brought above ground at a considerable saving in installation cost. At the same time, the effective range of operations has been extended to cover an entire street area. The radar beam is flexible and can readily be adjusted to new requirements brought about by alteration to the intersection. If the street should be widened, repaved, made one-way or changed in any way, the radar detector can be easily adjusted to meet the new situation without any of the expenses normally involved in remodeling other types of detectors at street and highway intersections.

Aluminum Railroad Signs Now Available

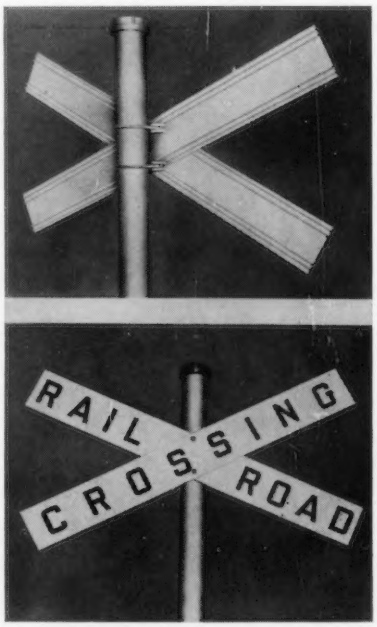
One of America's most traditional warning symbols, the railroad crossing "Stop, Look and Listen" sign, today faces the prospect of drastic improvement.

Known in railroad parlance as "crossbucks," the warning signs now are being introduced by Aluminum Company of America in the form of Maintenance-free aluminum extrusions.

Aluminum, the preferred backing material for reflectorized crossbucks, has many advantages which make it superior for any type of sign message. Its light weight, strength, and corrosion resistance guarantee almost unlimited life even in winds of hurricane velocity.

Alcoa's new aluminum crossbucks are produced by the extrusion process. This involves forcing hot aluminum through the die of an extrusion press, much as toothpaste is squeezed from a tube. Using the extrusion process, the crossbuck section can be produced as an aluminum plate with its structural stiffeners, all in one piece (see illustration).

Two extruded sections of specified length are then bolted together at their centers to form the crossbuck.



Two basic designs have been made available from Alcoa, one for four-foot crossbucks and another for six-foot. The crossbuck sections are supplied cut to length with the mounting holes (⅜ in. diameter for ½ in. bolt) drilled, if desired. Except for cleaning the surface of the sign, no further work is necessary before applying the reflective sign material or other message coating.

Where a railroad uses only one sign per crossing, the Alcoa crossbucks can be adapted for applying a message to both sides of the blades. Information on this special design is available from Alcoa.

The placement of the stiffened ribs on the back of the Alcoa extruded shapes is such that good, even support is given to the mounting bolts. The position of the ribs will also permit application of the sign by the use of Signal Section Adapter clamp No. 16477, used when mounting signs on standard pipe. Alcoa recommends aluminum or stainless steel bolts for use with the crossbucks to avoid fastener corrosion.

For further information on Alcoa Extruded Aluminum Crossbucks write to

Aluminum Company of America
765 Alcoa Building, Pittsburgh 19, Pa.

Safe-Grip Surfacing Machine Available

What has been called "the best solution in many years" to combat hazardous driving on existing open steel grid bridge floors is now available. The solution is a "Safe-Grip" Surfacing Machine developed and patented by Reliance Steel Products Company, McKeesport, Pa.

The "Safe-Grip" Surfacing Machine serrates (i.e. cuts small grooves in) the top surface of existing open grid bridge flooring, and provides an effective nonskid surface which is particularly necessary in wet wintery weather.

Engineers have reported that no accidents occurred from skidding or sideway after the Reliance "Safe-Grip" Surfacing was applied.

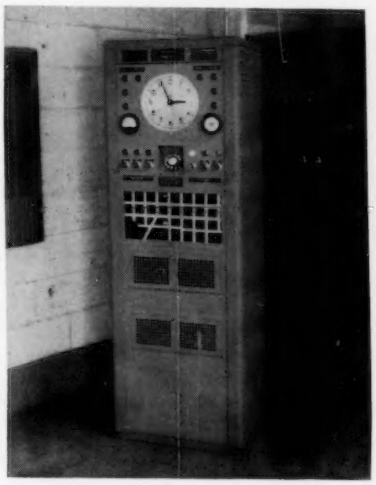
The Reliance "Safe-Grip" Surfacing Machine is self-propelled and allows highway engineers to maintain one-way traffic while the machine is in use.

Full details are available to state and county engineers, municipal authorities, and public road and bridge officials, by writing to

Reliance Steel Products Company
Walnut Street, McKeesport, Pa.

60 Traffic Signal Changes A Week with Existing 2-Wire Cable

The experience with a new type of automatic traffic control system in Moline indicates that it is possible to have a flexible traffic program without installing expensive multi-circuit wiring from master to local controllers. Moline's new "Monotrol" system is designed to handle the week's traffic program of up to 60 signal changes by means of a normal two-wire interconnecting cable.



Any city requiring a 21-intersection hook-up can install this system over existing wiring at an approximate cost of $15,000 for labor and equipment. The cost of accomplishing the same functions is approximately $140,000 when the expensive 9 to 12-wire interconnecting cable must be laid.

The new "Monotrol" signal system, as installed in Moline, involves the traffic lights of 18 critical downtown intersections. Since its installation, traffic has kept moving at a reasonable rate of speed through areas formerly congested. Smoother traffic flow has been accomplished by means of offsetting lights, increasing light cycle, utilizing numerous signal combinations, and favoring heaviest traffic with 67% green lights.

Inasmuch as traffic men are familiar with these features, discussion will be confined to special means of handling emergency conditions. For example, a string of green lights is thrown up along the route a fire engine takes to a fire. Cross-street traffic is stopped. Green lights actually open a fire lane while the former method of flashing amber lights blocked the lane with stopped traffic. Now when motorists become aware of a fire engine on the street they are traveling, they keep moving forward until they can pull over to the right or left or turn up a cross street.

Fire, police and ambulance emergency changes in signals are immediately made on request of the driver of the moving emergency vehicle. He calls for the desired route by radio-phone and an attendant simply pushes a button on the master controller, which immediately opens up the route with green lights. Only the signals at emergency route intersections are affected. All other signals operate in normal sequence.

After the emergency vehicle has had time to pass the intersections concerned, the master controller automatically changes the lights back to the normal sequence. This resumes the regular flow of traffic as quickly as possible.

The signals at the intersection can also be controlled by radio direct from the emergency vehicle. A radio device in the vehicle changes the lights green in the route ahead.

As previously indicated, the whole system is operated from one point. In fact, that is why the manufacturer, Eagle Signal Corporation, Moline, named the new system "Monotrol." The name is derived from "mono" meaning "one" and "trol" from the word "control." The central controller is located in Moline's police station, augmented by a sub-control panel at fire headquarters.

The central controller — or "Monotrol" master translator—sends out electrical impulses to 18 local controllers at the intersections. The local controller at each intersection contains a "Monotrol" responder. This device decodes the electrical messages.

Under normal conditions the central master controller is set to the regular pattern for operating the lights. In an emergency, an authorized city employee pushes a button on the master controller as previously explained. Or—for unexpected changes in time cycle necessitated by road conditions — he dials a code number on a dial similar to that of a telephone. In either case, the coded message is transmitted to the local responders at the intersections. Only those lights coded for change are altered in operation. The rest of the system remains unchanged and traffic flows normally.

INSTITUTE OF TRAFFIC ENGINEERS
NEW MEMBERS AND TRANSFERS

Elected by Board of Direction June 10, 1955.

TRANSFERS

ALVAREZ H., Luis E. (Associate)
Inspector Engineer
Highway Construction Department
Ministry of Public Works
Morande 71, 8° Piso
Santiago, Chile

BARTON, Eugene A. (Member)
Traffic Engineer
The H. K. Ferguson Company
Ferguson Building, 11th and Walnut Streets
Cleveland 14, Ohio

BATTS, Herman M., Jr. (Associate)
Traffic Engineer
Detroit Municipal Parking Authority
9th Floor, Griswold Building
Detroit 26, Michigan

BAUCH, William Frederick, Jr. (Member)
Expressway Traffic Engineer
Illinois Division of Highways
160 North LaSalle Street
Chicago 1, Illinois

BERGSMAN, Seymour E. (Associate)
Area Engineer
Department of Streets and Traffic
15th Floor, Water Board Building
735 Randolph
Detroit 26, Michigan

BRITTON, George Raymond (Member)
Head Research Engineer
Pennsylvania Dept. of Highways
Highway Planning Division
21st and Herr Streets
Harrisburg, Pennsylvania

CHAMBLISS, Jack W. (Member)
Assistant Traffic Control & Safety Engineer
Mississippi State Highway Dept.
Woolfolk State Office Building, Box 1850
Jackson, Mississippi

CHENOWETH, Cecil E. (Member)
Assistant Traffic Operations Engineer
Illinois Division of Highways
405 East Washington Street
Springfield, Illinois

CLEVELAND, Donald E. (Associate)
Traffic Engineer
Ramp Buildings Corporation
230 Park Ave., New York 17, N. Y.

FIELDING, Roy H. (Associate)
Assistant Traffic Engineer
City of Cincinnati
417 Lincoln Park Drive
Cincinnati, Ohio

GALLAGHER, John L., Jr. (Associate)
Assistant Traffic Engineer
Div. of Traffic Reg. & Engineering
Room 112, Safety Building
Columbus, Ohio

GOODWIN, Charles A. (Member)
Traffic & Transportation Engineer
Liberty Mutual Insurance Company
175 Berkeley Street
Boston 17, Massachusetts

GROSS, Stanford P. (Associate)
Senior Asst. Traffic Engineer
Dept. of Streets and Traffic
15th Floor, Water Board Building
735 Randolph
Detroit 26, Michigan

HENSLEY, Marble J. (Member)
Traffic Engineer
City Hall, Room 114
Chattanooga, Tennessee

HIGGINS, Herbert C. (Member)
Office Engineer
Washington State Highway Commission
Transportation Building
Olympia, Washington

HUMPHREY, H. Dale (Associate)
Traffic Engineer II
Bureau of Street Traffic
709 City Hall
Chicago, Illinois

HUNNICUTT, J. Madison, Jr. (Associate)
Traffic Engineer
Bureau of Street Traffic
Room 709, City Hall
Chicago, Illinois

HUTCHISON, Alexander L. (Member)
District Traffic Engineer
California Division of Highways
120 So. Spring Street
Los Angeles 12, California

JENKINS, Arthur C. (Member)
Consulting Engineer, Transport and Traffic
U. S. Govt., Cities, States, Etc.
1095 Market Street
San Francisco, California

KEITH, Robert A. (Associate)
Planning Engineer
Ramp Buildings Corporation
230 Park Avenue
New York 17, New York

LENTELL, Lynwood W. (Associate)
Assistant Highway Engineer
California Division of Highways
Olive & Carruth Streets
Fresno, California

LINGLE, Myron K. (Member)
Assistant Engineer of Traffic
Illinois Division of Highways
405 East Washington Street
Springfield, Illinois

MACNEE, Walter Q. (Associate)
Traffic Engineer
Ontario Department of Highways
Room 1422, Parliament Buildings
Toronto, Ontario, Canada

McGRATH, William K. (Associate)
Director, Dept. of Traffic & Parking
Hall of Records
200 Orange Street
New Haven, Connecticut

MOGREN, Edward G. (Associate)
Sales Engineer
Automatic Signal Division
Eastern Industries, Inc.
Regent Street
East Norwalk, Connecticut

MOHR, Eric A. (Associate)
Associate Transportation Engineer
California Public Utilities Commission
State Building, Civic Center
San Francisco, California

MUFFLEY, Paul D. (Member)
Highway Planning Engineer
Pennsylvania Dept. of Highways
Planning Division, 21st and Herr Sts.
Harrisburg, Pennsylvania

NEWELL, Russell J. (Member)
District Traffic Engineer
Illinois Division of Highways
160 N. LaSalle Street
Chicago, Illinois

RAY, James L. (Member)
Engineer, Coverdale & Colpitts
120 Wall Street
New York, New York

RICE, Joseph F. (Associate)
Senior Traffic Engineer
Kentucky Department of Highways
Traffic Division
Frankfort, Kentucky

SIMM, Eugene L. (Associate)
Associate Traffic Engineer
Wilbur Smith & Associates
265 Church Street
New Haven, Connecticut

SIMOFF, Abram (Associate)
Traffic Engineer
City of East Orange, City Hall
East Orange, New Jersey

WHEDON, Burt (Member)
Director, Dept. of Street Transp. and City Traffic Engineer
607 City Hall
Omaha 2, Nebraska

WILLIAMS, Earl C., Jr. (Associate)
Traffic Engineer
City of Wichita Falls
Memorial Auditorium
Wichita Falls, Texas

NEW MEMBERS

LEOPOLD, Robert B. (Affiliate)
Managing Director
Atlanta Traffic & Safety Council
87 Walton Street, N. W.
Atlanta, Georgia

ANGELL, James E., Jr. (Junior)
Assistant Traffic Engineer
Room 208, City Hall
Indianapolis, Indiana

AUSTIN, Malcolm E. (Associate)
Traffic and Planning Engineer
Clarkeson Engineering Co., Inc.
285 Columbus Avenue
Boston, Massachusetts

BACKHOUSE, William O. (Member)
Town & Regional Planning Consultant
Self-Employed, Office 107
Anglo-American Corp. Bldg.
45 Main Street, P. O. Box 9624
Johannesburg, South Africa

BAYLEY, John M. (Junior)
Traffic Engineering Assistant
Melbourne City Council
Town Hall, Melbourne
Victoria, Australia

BENNETT, George H. (Associate)
Traffic Signal Engineer
Pennsylvania Department of Highways
21st and Herr Streets
Harrisburg, Pennsylvania

BIDELL, William (Junior)
Design Engineer
Ontario Department of Highways
Room 2627, East Block, Parliament Bldgs.
Toronto, Ontario, Canada

BLUMENTHAL, Robert C. (Associate)
Owner, Robert C. Blumenthal Associates
177 Milk Street
Boston 9, Massachusetts

BOYER, William W. (Associate)
Assistant Professor
Civil Engineering Department
University of Massachusetts
Amherst, Massachusetts

BRANDT, Warren H. (Junior)
Field Engineer, Bureau of Traffic
Illinois Division of Highways
164 Du Page Street
Elgin, Illinois

BROWN, Philip S., Jr. (Junior)
Assistant Highway Engineer
Washington State Dept. of Highways
Planning Division
Transportation Building
Olympia, Washington

BURLESON, Joe M. (Junior)
Assistant Director of Street Transp.
607 City Hall, 18th and Farnam
Omaha, Nebraska

CARPER, Walter G., Jr. (Associate)
Research Engineer
Pennsylvania Department of Highways
Highway Planning Division
21st and Herr Streets
Harrisburg, Pennsylvania

CARROW, William R. (Junior)
Assistant Traffic Engineer
Delaware State Highway Department
152 South State Street
Dover, Delaware

CLARK, Glen L. (Junior)
Traffic Investigator
Oregon State Highway Department
Room 312, Oregon State Highway Building
Salem, Oregon

CLEARY, Thomas M. (Associate)
Assistant Civil Engineer (Traffic)
New York State Thruway Authority
Elsmere, New York

CORBETT, Bernard A., Jr. (Junior)
Traffic Engineer & Planner
Engineering Department, City Hall
Burlington, North Carolina

de VALENCE, Paul (Associate)
Assistant Traffic Engineer
Ontario Dept. of Highways
Room 1422, Parliament Buildings
Toronto, Ontario, Canada

DIMITRI, Michael S. (Junior)
Assistant Civil Engineer, Highway Traffic
Department of Traffic
100 Gold Street
New York 38, New York

FLORES-ABREU, Andres (Junior)
Traffic and Planning Engineer
Department of Public Works
Stop 22½ Ponce de Leon Avenue
Santurce, Puerto Rico

FRINK, Leslie M. (Junior)
Civil Engineer Assistant
Los Angeles County Road Department
108 West 2nd Street
Los Angeles 12, California

GALLAGHER, John F. (Junior)
Assistant District Traffic Engineer
Massachusetts Dept. of Public Works
403 Belmont Street
Worcester, Massachusetts

GEORGE, Stephen, Jr. (Junior)
Jr. Civil Engineer (Design)
California Division of Highways (Dist. VIII)
P. O. Box 231
San Bernardino, California

GREGORY, Randolph T. (Junior)
Assistant Traffic Engineer
Traffic Engineering Department
City of Fort Worth, 950 Jennings
Fort Worth, Texas

GRIMM, Robert C. (Associate)
Senior Engineer
City Engineering Department
City Hall
East Orange, New Jersey

HALVERSON, James R. (Junior)
Chief Traffic Engineer
State Road Commission of Utah
525 West 13th South
Salt Lake City, Utah

HARTIGAN, Michael J. (Junior)
Traffic Engineer II
Bureau of Street Traffic
Room 709, City Hall
Chicago, Illinois

HENDRICK, ROE P. (Junior)
Traffic Engineer
Bruce Campbell & Associates
177 Milk Street
Boston, Massachusetts

HYMAN, Meyer K. (Associate)
Assistant Highway Engineer (Traffic)
California Division of Highways
150 Oak Street
San Francisco, California

JOHNS, Kenneth B. (Associate)
Traffic Engineer (Electrical)
Kentucky Department of Highways
Frankfort, Kentucky

KENT, Robert D. (Associate)
Traffic Manager
Utah State Road Commission
525 West 13th South
Salt Lake City, Utah

(Continued on page 418)

PARK-O-METER

The one parking meter engineered to meet *every* metered-parking need in time and coin combinations . . . from six minutes to three twenty-four-hour days.

Park-O-Meter operates automatically on any one, two, three or all four commonly used coins . . . pennies, nickels, dimes, quarters in every sequence.

They are flexible, too. Simple adjustments permit changes in coin and/or time combinations when new conditions or parking regulations dictate changes.

To bring your parking meter system up to date . . . *and keep it that way* . . . install Park-O-Meters.

(Above) The Park-O-Meter installation at the magnificent new municipal airport facility at Phoenix, Arizona

Created by the originators of Metered Parking

Magee-Hale
PARK-O-METER COMPANY
Commerce Exchange Bldg.
OKLAHOMA CITY 2, OKLAHOMA

NEW MEMBERS AND TRANSFERS

(Continued from page 416)

LANGSNER, George (Associate)
Assistant District Engineer
California Division of Highways
120 South Spring Street
Los Angeles 12, California

LELAND, Elmer J. (Junior)
Assistant Traffic Engineer
Traffic Engineering Department
Room 502, City Hall
Long Beach, California

MAGIN, David R., Jr. (Junior)
Engineer II (Traffic)
Bureau of Traffic Engineering
526 S. W. Mill Street
Portland 1, Oregon

MENGILIBORU, Sedat (Associate)
Chief of Traffic Safety Division
General Directorate of Highways
Karayollari Umum Md. Trafic Fen Heyeti Md.
Ankara, Turkey

MILLER, Edwin H. (Junior)
Traffic Engineer II
Michigan State Highway Department
407 County Building
Kalamazoo, Michigan

MORALES, Edwin Cuebas (Junior)
Civil Engineer
Department of Public Works
Bureau of Traffic
Stop 23
Santurce, Puerto Rico

MUKIS, Charles E. (Junior)
Traffic Engineering Designer
Chicago Park District
425 E. 14th Boulevard
Chicago 5, Illinois

OAKES, Roy E. (Junior)
Acting Chief, Traffic Eng. Division
Department of Public Works
City Hall
Berkeley, California

PETRILLO, Paul C. (Junior)
Traffic Engineer
Ramp Buildings Corporation
230 Park Avenue
New York 17, New York

POLLARD, William S., Jr. (Associate)
Chief Engineer
Harland Bartholomew and Associates
City Planners
317 North Eleventh Street
Saint Louis 1, Missouri

RATNER, Robert J. (Associate)
Highway Engineer
Rader Engineering Company
111 NE 2nd Avenue
Miami, Florida

RODRIGUEZ, Jorge F. (Junior)
Civil Engineer
Traffic Bureau
Department of Public Works
Stop 22½
Santurce, Puerto Rico

ROSE, Charles A. (Junior)
Assistant Traffic Engineer II
Traffic Engineering Department
311 City Hall
Atlanta, Georgia

ROSENFIELD, David (Junior)
Graduate Assistant
Joint Highway Research Project
Purdue University
Lafayette, Indiana

ROY, George R. (Junior)
Assistant Highway Planning Engineer
Port of New York Authority
111 Eighth Avenue
New York 11, New York

SINEMUS, Herman A. (Junior)
Assistant Traffic Engineer
City Traffic Engineering Department
226 W. Washington Street
Fort Wayne, Indiana

SMITH, Edwin M. (Junior)
Traffic Designer
Texas Highway Department
Austin, Texas

SOLOMON, David (Junior)
Highway Transport Research Engineer
Bureau of Public Roads
Room 3035
Washington 25, D. C.

SORENSON, Jack L. (Associate)
Traffic Engineering Designer
Chicago Park District
425 E. 14th Boulevard
Chicago 5, Illinois

SWANSON, David P. (Associate)
District Traffic Engineer
State Department of Highways
Box 52
Yakima, Washington

TRAVERS, Warren (Associate)
Traffic Engineer
Edwards, Kelcey and Beck
3 William Street
Newark 2, New Jersey

VUKOVITS, Frank S. (Associate)
Assistant City Traffic Engineer
City of South Bend
214 N. Main Street
South Bend, Indiana

WALLACE, James M. (Associate)
Senior Civil Engineer
New York State Traffic Commission
State Office Building
Buffalo, New York

WATT, James E., Jr. (Junior)
Bruce Campbell & Associates
177 Milk Street
Boston, Massachusetts

WEINBERG, Irving B. (Junior)
Assistant Design Engineer
Ontario Department of Highways
Room 2627 East Block, Parliament Bldg.
Toronto, Ontario, Canada

WILEY, Eric S. (Junior)
Traffic Co-ordinator
City Hall Annex, City of Windsor
950 Chilver Road
Windsor, Ontario, Canada

Membership Applications

The following applications have been received since the list of applicants published last month.

APPLICATIONS FOR TRANSFER

BUCKMAN, Thomas Robert
Traffic Engineer
City of Fort Worth
1000 Throckmorton Street
Fort Worth, Texas
May 27, 1955 for MEMBER grade

OVERMYER, Richard A.
Traffic Engineer III
Bureau of Traffic Engineering
Room 1005 City Hall Annex
Philadelphia, Pennsylvania
June 14, 1955 for ASSOCIATE grade

SYREK, Daniel Bruce
Civil Engineering Associate
Los Angeles County Road Department
Los Angeles, California
May 20, 1955 for ASSOCIATE grade

THOMAS, William Lamar
Assistant Traffic Engineer
Traffic Engineering Department
311 City Hall
Atlanta, Georgia
May 19, 1955 for ASSOCIATE grade

TIDD, Edgar Lee, Jr.
Traffic Engineer
Virginia Department of Highways
1221 East Broad Street
Richmond, Virginia
May 25, 1955 for ASSOCIATE grade

NEW APPLICATIONS

CHALLIS, James Wood
Assistant Civil Engineer I
Division of Traffic Engineering
Bureau of Engineering
Department of Public Works
San Francisco, California
May 23, 1955 for MEMBER grade

EDENS, Hendrik Johan
Traffic Engineer
Town Planning Consultants, Ltd.
614 Church Street
Toronto, Ontario, Canada
June 6, 1955 for JUNIOR grade

EDWARDS, Herbert Martell
Assistant Professor of Civil Engineering
Queen's University
Kingston, Ontario, Canada
June 6, 1955 for JUNIOR grade

HOMBURGER, Wolfgang Selmar
Junior Research Engineer
Institute of Transportation and Traffic Engineering
University of California
Berkeley 4, California
May 27, 1955 for JUNIOR grade

LEWIS, Ralph Glenn, Jr.
Assistant Traffic Engineer
City of Chattanooga, 114 City Hall
Chattanooga, Tennessee
May 26, 1955 for JUNIOR grade

SPEER, Richard C.
Engineer II (Traffic)
Bureau of Traffic Engineering
City of Portland
526 S. W. Mill Street
Portland, Oregon
June 14, 1955 for JUNIOR grade

WICKSTROM, George V.
Assistant Civil Engineer
New York City Department of Traffic
100 Gold Street
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June 6, 1955 for JUNIOR grade

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For traffic engineering department just recently established.

Requirements: Registration as a professional engineer. Applications accepted until the needs of the service are filled.

Salary: $537 to $620 a month with maximum salary obtainable through annual and longevity increases.

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ASSISTANT AND SENIOR ASSISTANT TRAFFIC ENGINEERS

Requirements: Must be graduate engineers with experience in municipal traffic engineering work. A merit examination is required.

Salary: Assistant—$5287 per year.
Senior Assistant—$6287 per year.

Applications should be sent to:
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612 City-County Building
Detroit 26, Michigan

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ASSISTANT TRAFFIC ENGINEER

To assist City Traffic Engineer in newly organized Traffic Engineering Department in all phases of Traffic Engineering work with emphasis on traffic planning studies, and the design and location of thoroughfares and off-street parking facilities.

Requirements: 3 to 4 years experience or 2 years experience with specialized training in Traffic Engineering with highway capacity and design work or Engineering graduate with undergraduate training or 1 year experience in highway design.

Salary: Starts $362.00 per month. Top—$464.00 per month.

Write: Robert J. Kimley
City Traffic Engineer
318 City Hall
Greensboro, N. C.

SECTION NEWS

TEXAS SECTION

The Texas Section of the Institute of Traffic Engineers held its semi-annual meeting in Midland on June 3 and 4 with **Charles J. Keese** as host.

With the Triple D Motel as headquarters forty-five traffic engineers and visitors gathered at this West Texas metropolis (**Joe Nadon** of El Paso says its east) for a fine technical program and social gathering.

The meeting was called to order in the air-conditioned comfort of Midland's new public safety building by President **Eugene Maier** at 1:30 P.M. June 3. Mr. **Carl J. Rutland,** Honorary Life Chairman of Dallas Citizens Traffic Commission, gave the keynote talk during the technical sessions on the subject, "Practical Public Relations." Without good public relations the traffic engineer can do little toward selling his wares. Other subjects on the first day's program were "Parking," a discussion of the interview method of making a parking survey by **J. E. Wright** and "Signing Expressways and Arterial Streets" by **W. R. Stebbins.**

Friday night an old-fashioned western barbecue was held in Cole Park complete with beer on tap and all the trimmin's followed by some excellent entertainment arranged by the Midland Chamber of Commerce.

On Saturday morning there were panel discussions on "The Design and Control of Curb Cuts" and "Signal Control in the Downtown Area." Both of these subjects elicited some lively audience participation.

Among the visitors present were **Skinny DeYoung** (WesternITE's unfailing ambassador of good will) and **Francis Burton** of Albuquerque, N. M.

Not to be outdone by the West the meeting was honored by the presence of a New Englander, **Walt Schwanhausser,** who spark plugged the panel discussion on Downtown Signal Control. Walt's authoritative discussions on anything pertaining to signals are always most interesting.

Austin

Walt Klapproth reports—The Traffic and Transportation Department has almost been run "nuts" in recent months by requests for special left turn provisions at signalized intersections. It is difficult to correlate a policy of "the customer is always right" with warrants for such provisions.

A parking survey in 88 blocks surrounding the University of Texas has been completed. (This area comprises an outdoor parking lot for six or seven thousand cars operated by students and faculty members living in the area.) It is hoped the study will stimulate action on one-way street recommendations made several years ago.

Houston

A new $130,000 Traffic Engineering Shop Building has just been completed and **Gene** states that they are now somewhat in the "luxury" class.

Houston's Central Business District signal system is now boasting one of Automatic Signal Company's new MC-11 cycle computer units—the first one in actual service operation in the United States.

Dale Marvel is trying to sell **Bim Greer** and the boys in Austin on the merits of the two channelized intersection layouts, complete with signals, which he had at the Dallas meeting.

A brand new Pontiac has taken up abode in **Tom** and **Ad Willier's** garage. The colored maid serving his next door neighbor bought one first and they couldn't stand it until they bought one just like it.

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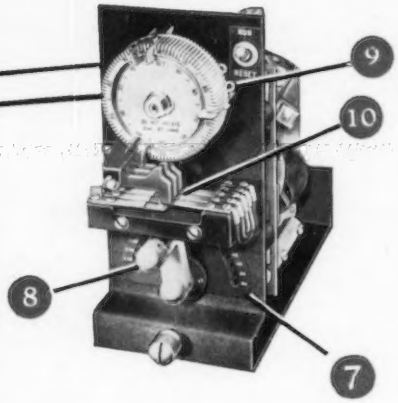
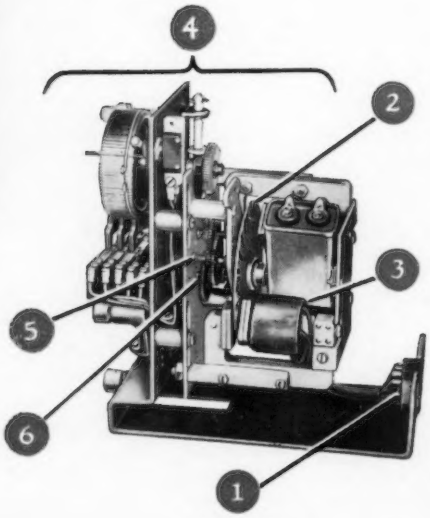
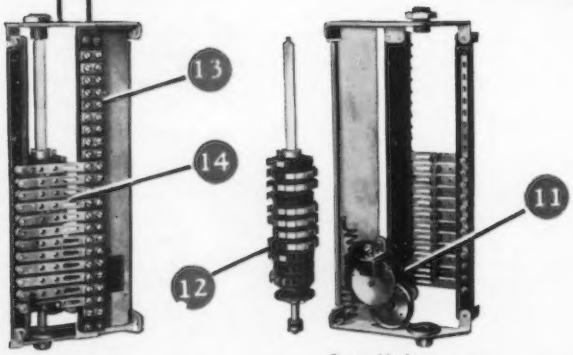


Dial-Unit
Enlarged Front View



Dial-Unit
Enlarged Side View



Cam-Unit
Right Side

Cam-Unit
Cam Shaft Removed
Left Side

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It provides for future growth

At any location where a single-dial controller is adequate today, but where a more complex controller may be required in the future, the Crouse-Hinds Type LS Synchronous Controller makes an ideal installation. It can be supplied for non-interconnected, future-interconnected, or interconnected operation.

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The Type LS Controller may be purchased with 1, 2, or 3 resets on each dial-unit. When shipped from the factory, all dial-units are wired for 3 resets. Reset 2 and reset 3 may be added in the field to single-reset dial-units by simply installing dial contacts and switch arms. It's as easy as that!

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Important Features of the Cam Unit

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Amarillo

Hal Miller and **Chuck McLeroy** are busy wrestling with their new free-way system.

We understand that experiment in Amarillo with hidden coin meters in the fringe areas have proved successful. These meters permit parking for the entire A.M. or P.M. periods for 10 cents.

MIDWEST SECTION

Snipped out of **Midwest ITE*MS, Dick Walons,** Editor.

Meet Pete Page

The bantam-sized dynamo that is usually found where there is work to be done is Pete Page. This is the kind of description we would give any stranger who might be looking for Pete.

Born Peter M. Page in Chicago in 1902, he was educated in the city school system. His first job was at the tender age of twelve as a copy boy for the old *Chicago Evening Post.* Pete didn't like working for a lady boss, the Society Editor, so he quit. Little did he know the value of that training for the future. Pete also ventured into the business of manufacturing buttons for a while.

In 1925 he went to work for the South Park District as a rodman. It was here that he was able to nurture his ideas for improving the lot of the motorist. Eight years later he became associated with the late Otto K. Jelinek, Chicago Park District's first traffic engineer. At that time Pete was Jelinek's only assistant and all work had to be performed by borrowed men.

When the various park districts in Chicago were consolidated to form the Chicago Park District in 1935, Pete remained with the traffic engineering section. He moved steadily up the ladder from traffic checker to his present position, Traffic Construction and Maintenance Supervisor. Pete's keen interest and inventive genius have been responsible for a number of unique control devices for which the Park District is noted.

In the field of arts, music is Pete's choice. In the early twenties he had his own orchestra which played at weddings and other joyous occasions. Pete played the saxophone and he still does as a hobby. Like many others in our profession he is outnumbered by women in his family, which includes his wife, Mary, and three daughters, Maryann, Dorothy and Patricia. Maryann is in college and the two younger girls are in high school.

Meet Gordon Lindquist

Gordon Lindquist, in his work for the past eight and one-half years as Assistant Director of the Safety and Traffic Engineering Department at the Chicago Motor Club, has developed a reputation for being calm, cool, and collected. So it was something of a surprise to his friends around the office when he showed a strongly human side one morning last December. It is not accurate to say that he went to pieces, but here is what happened: When he came in, his secretary told him his wife, **Ruth,** had called with a report that the latest addition to the family was near. To begin with, it took four wrong numbers before he got her on the line. Then it took him three trips up and down from the 13th floor before he could get started for home. (The first time he forgot his coat; the second time he forgot his car keys; and the third time he forgot his galoshes.) So much for his reputation for being calm, cool, and collected.

The December call was a false alarm. But on January 16 it was no false

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You can stop looking for *red stop signs* when you see the MIRO-FLEX line. That's because you're sure to find just the right sign for your community and your budget. Five standard models, all conforming to United States Public Roads Administration specifications, are available. They have rounded Series C, white letters—one-third the height of the sign on a red background. You have your choice of reflectorized letters, all-over reflectorization, or plain signs. With the exception of the aluminum model, they are made of 16-guage, zinc-coated, Bonderized steel. *Write for literature and prices on* MIRO-FLEX RED STOP SIGNS *and ask for catalog showing the complete traffic control sign line.*

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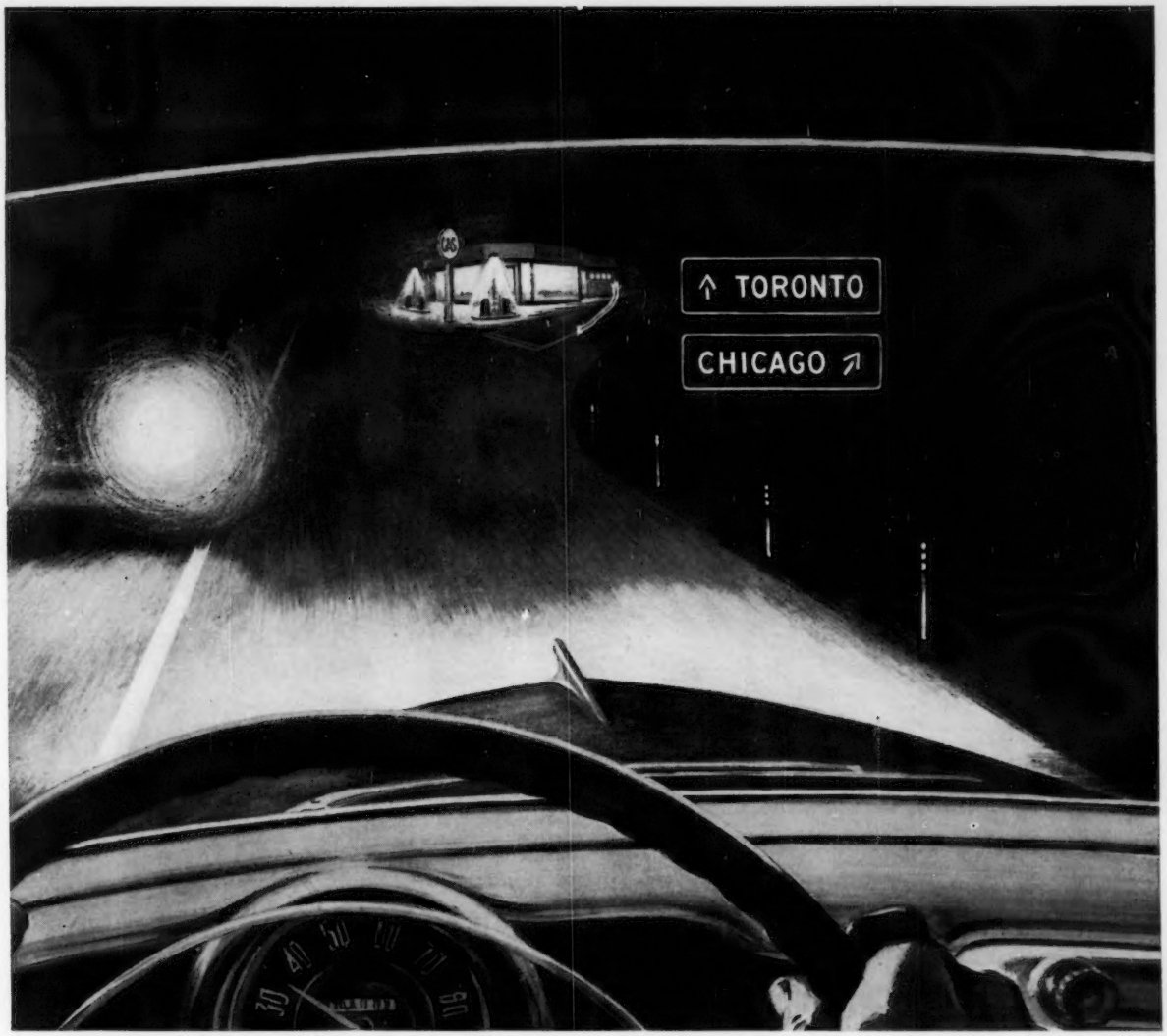

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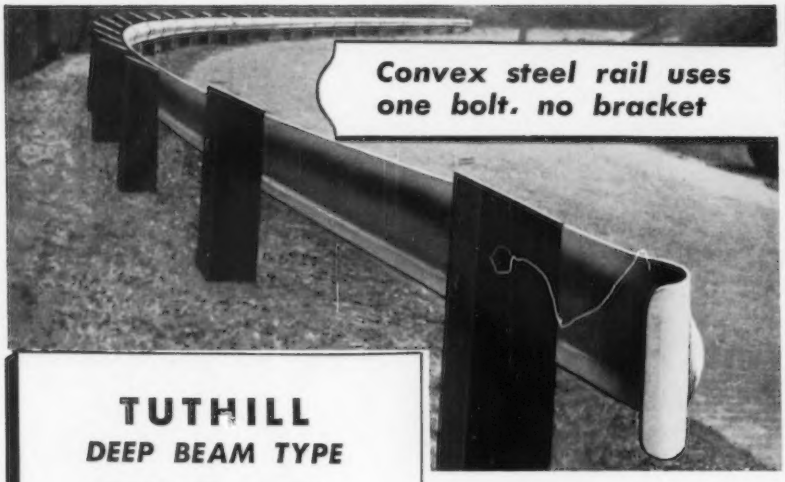

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alarm—a 6-pound 7-ounce baby girl, **Betty Harriet**, was born. This rounded his family out to five. The others are his co-partners in shoveling snow—**Barbara**, ten and a half, and **Bobby**, seven and a half, and his lovely wife, **Ruth**, who has the duty of cutting the grass. **Gordon**, being the considerate husband that he is, is going to buy her a power lawn mower to make her work a little easier.

In the summertime he spends his vacation with his family in a log cabin in the backwoods of Michigan, where he fishes and enjoys living in the rough.

Gordie is active in church activities, and very often does missionary work on Skid Row. He is coach of the church basketball team which has a record of 18 games in a row without a loss. They took the city championship in 1955 and second place in 1953 and 1954. Besides being a very good coach, he also is a master of the golf clubs. (He shoots a game in the low eighties.)

Being a new home owner, he can give you a lot of tips on how to relax while building. His suggestion to any potential home owner is to plan a six-month trip so that you will be at least 600 miles away from your new site, thus letting the builder do all the worrying about the home. Another suggestion is to use care in hiring your contractors. It seems that he had all "Swedes" working on his home, except for one plumber. He claims that one plumber held up all of the work. So his suggestion for any person building is to use all "Swedes."

Fund Proposed

The Board of Directors of Midwest ITE has an informal proposal now before it which is expected to generate considerable thought and comment among the membership. The proposal, if adopted, would remove the financial barrier from the path of many qualified section members interested in holding national office.

An officer of the national ITE incurs many expenses in performance of his duties. Private organizations will often subsidize the expenses of their employees; governmental agencies often will not. Because of this, governmental men (which represent two-thirds of the membership) have been holding less than half of the national offices.

To achieve a better balance in representation, it has been proposed that a fund be established by the section, to finance nationally elected representatives who cannot receive subsidization from their employers. One way of obtaining this fund would be by increasing section dues from $4 to $5. Other ways are possible.

The proposal may soon be placed before the membership of the Midwest Section for discussion and vote.

Debate Drawn

One of the largest turnouts this year witnessed a debate at the last meeting, on April 21, at the Engineers' Club, regarding mass transportation vs. private cars. The key speaker for mass transportation was **Kay "Tiger" Lorentzen**, while in defense of the motorist was **Gordon "Slinky" Lindquist**, substituting for **Matt "Rocky" Sielski**, who was out of town weighing trucks.

Mass transportation is on the downgrade, because of the overcrowded streets, was a statement made by **Kay Lorentzen**. He also said that he felt the new parking facilities were luring motorists to drive to the overcrowded downtown area. He said that the C.T.A. is going a long way to provide offstreet parking facilities near Rapid Transit Stations to attract motorists to the Rapid Transit System. He concluded with a short historical talk about the Chicago Surface Lines and the C.T.A.

Gordon "Slinky" Lindquist then attacked the C.T.A.'s bad service, jerky rides, inconvenient service and his pet peeve, passing up **Gordon Lindquist** when he is waiting for a bus. He then said that he made a few runs with his private automobile from Foster and Cicero Avenues to the Chicago Loop in 27 minutes. Information furnished him by an inside source (a fifth column man) informed him the same trip would take 65 minutes by surface ride and 47 minutes by surface and Rapid Transit route. He also said that the C.T.A. doesn't pay state license tax, and trolley buses need not pay license tax or gas tax. And, in view of this fact, they still expect the City of Chicago to build special roadways, transit lanes, and to give them special privileges. He also said that they ran third in highest fares in the country.

The debate then opened for discussion, and there were several testimonies from both sides, but both men on the debate team held firm on their statements.

Then **Dave Baldwin**, the referee, summed up the debate, and his decision was a draw.

At this time the two debaters shook hands and smiled at each other, and everybody went home smiling and still friends, except for the fifth column man who went home without a friend in the world.

TIRED

TIRED . . . of expensive winding of your parking meters two or three times a week?

TIRED . . . of complicated mechanisms too difficult to maintain?

TIRED . . . of revenue loss due to frequent jams and inoperative equipment?

TIRED . . . of motorists complaining about "out of order" meters?

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Room for Expansion

In the last issue of ITEms we were lamenting over the lack of academic interest in our profession. Perhaps we should have reviewed the potential demand for traffc engineering services a little beforehand. What we saw going on in Peoria prompted a little research to determine how many similar cities had no city traffic engineer.

Our count shows that there are 88 towns and cities in 100,000 to 500,000 population class in the U.S.A. The ITE Year Book shows that in 48 of these cities there is a member whose title is city traffc engineer or equivalent. We are not implying that only 48 out of 88 cities carry on a traffic engineering activity. At least the figures indicate that in 48 cases traffic engineering has attained some stature. There may also be a few city traffic engineers who are not ITE members (perish the thought!). Anyhow, it appears that there are approximately 40 medium-size cities which need a city traffic engineer and staff.

In the next population group, 50,000 to 100,000, there are 126 cities and towns. Forty-eight of these have city traffic engineers. There appears to be 78 prospects in this group. While these may not have the attractions and, at times glamor, associated with larger cities, still they represent a field worthwhile exploiting.

In a sketchy way we have shown that there is room for expansion in towns and cities. There is more room for traffic engineers in many countries which are being overrun by metropolitan area traffic. Are we trying to sell to these prospects or are we hoping that they get the idea by themselves?

We Came — We Saw

The Peoria trip went off without a hitch. That was the unanimous opinion of all who participated in the annual spring outing on May 20th. Not only did the bus maintain its schedule, but each and every Peoria stop was timed perfectly.

The mode of transportation was one of Greyhound's finest, a new, sleek, air-conditioned bus. The expected "bar" was set up by the removal of two seats, and was in business before the bus left the Chicago city limits.

Eating, drinking, card playing, and technical sessions (informal style) highlighted the three-plus hours spent on the road. By the time we crossed the Peoria city limits, enthusiasm had reached a peak and we were ready to take in whatever Peoria had to offer.

This was one meeting where the section membership found no geographical barriers. Section members from Milwaukee as well as Springfield were able to make the trip. And Peoria was all and more of what we expected to find.

Peoria's Pabst Brewery was the initial stop of the 17-point tour of the city. It amply fulfilled a gap in the program which occurred when Hiram Walker, on strike, was unable to entertain our party. The brewery tour wound up in the "33 Room," where we sampled the amber liquid we had seen made.

The Peoria tour following that took us through the city's points of interest, and included showing latest traffic improvements. The Illinois Division of Highways office displayed a model of the proposed expressway for Peoria. Another high point was the new police administration building.

The Caterpillar Tractor Plant was the last but not the least, point of interest. After a cafeteria supper, we saw just how Caterpillar engines were made in their engine factory. A safety movie completed the evening, and we left Peoria very much impressed with the city and its industry.

The consensus of opinion seems to be that we'll have to go back some day, after they've recovered.

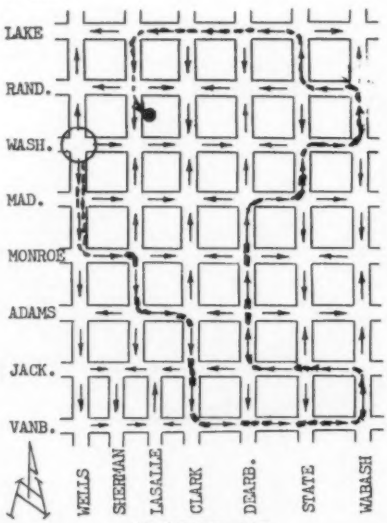
Puzzle Corner

A small city installed parking meters in four different areas (A, B, C, D). Four city officials were asked to name the areas in the order of best revenue production. Their answers were:

	Best	2nd	3rd	Worst
Mayor	C	A	B	D
City Engineer	B	D	A	C
Police Chief	D	B	C	A
Treasurer	B	A	C	D

The results were known before long and on comparison it was noted that three of the officials were wrong on two out of their four guesses, while the other one was wrong on all four.

What was the correct order of the areas?



ANSWER TO
LAST MONTH'S PUZZLE

Annual Section Meeting

Midwest ITE **Charles S. Michalski** announced plans to return to South Africa in July in order to complete traffic studies now in progress in Johannesburg. He plans to make the trip with **Lloyd B. Reid**, former New York City Traffic Commissioner, who has been engaged by the South Africans to organize surveys and recommend measures for improvement of traffic conditions. The trip and survey will take approximately five weeks to complete.

Les Sorenson couldn't be prouder these days. It was a happy moment when news came of Chicago's first place in the NSC contest. Happier yet was Friday when the telegram reached City Hall that Chicago also had won first place award for outstanding achievement in Traffic Engineering among Group I population cities.

Bob Harris, Special Events Committee Chairman, announced a profit of $5.30 on the Peoria trip. The money will be added to the treasury of Midwest ITE.

Midwest ITEs this month welcomed back **Dale Humphrey** from an extended "vacation" in the East. Dale spent nine months at the Yale Bureau of Highway Traffic in New Haven. His thesis was written on "The Influence of the Direction of Slope of Obstruction Markings on the Vehicle Driver."

While the rest of the membership was trying to determine the number of school crossing signals in Peoria, **Bill Marston** was addressing the Third Annual Traffic Control Conference at Purdue University. The conflicting dates prevented the local membership from availing themselves of words of wisdom as expounded by an imposing array of speakers, including D. Grant Mickle, Burton W. Marsh, James T. White, and of course, the aforementioned William R. Marston. The Conference lasted two days, May 19th and 20th.

Danny Hanson deserves congratulations for the fine article on him and his city appearing in the latest issue of TE magazine.

Add two more to the list of potential traffic engineers. **Mike Hartigan** and **George Kloac** are now proud fathers of baby boys.

At Peoria

Behind every successful man there is a woman. **Bob Harris** arranged the trip beautifully, but who was Chief Sandwich Maker? Ask Barb how the 100 got made.

Fred Potenza's prize for knowing the correct number of school crossing signals on our tour was most appropriate. Who needs a patrol boy's belt more than a Chicago Motor Club employee?

SOUTHERN SECTION

Excerpts from the Southern Section Newsletter, John T. Hanna, Editor

Georgia

Savannah is starting its third year since the Traffic Commission was set up. This Commission is made up of two members appointed by the County Commissioners, three by the City, and one elected by these five-at-large to serve as Chairman. The Commission has rather broad powers. It can put into effect changes in traffic rules and ordinances without the sanction of either the County or the City, such regulations remain in effect for a minimum of sixty days.

The Traffic Engineering Department of the City of Savannah is headed by Mr. Robt. M. Plank, who also has under his jurisdiction the City Planning Commission Office.

H. B. CAMMACK (Mem., ITE)
Savannah

A toll bridge has recently been opened across Savannah River in Savannah. All A.G.A. letters with red tone, blue background and aluminum signs were used. They obtained monotubes from Union Metal Company for overhead signs, using 18" letters to direct traffic to the bridge. The total expenditure on signs alone was about $25,000.

Plans are being made for permanent signing of the Atlanta Expressway which will be presented to the State Highway Board in the near future.

Another 12 miles of four-lane divided highway was recently opened, giving a total of 80 miles of four-lane divided highway in and around Atlanta with about 10 miles to be opened in late Spring.

W. S. DERRICK (Mem., ITE)
Atlanta

Kentucky

A program is underway in Louisville involving the installation of walk-wait lights at fifty-seven downtown intersections and the installation of two overhead mastarms supporting traffic signals at each intersection.

Passenger car and truck licenses were issued to 18,000 additional vehicles during 1954 in Jefferson County which contains the City of Louisville, and this increases our registration to 186,000 vehicles.

Department of Traffic Engineering is planning more "No Stopping" regulations in order to accommodate these vehicles plus the additional vehicles which will be registered in 1955.

W. F. WATKINS (Mem., ITE)
Louisville

(Continued on page 428)

Letters to the Editor

Sir:

"HELP! HELP! Get me untangled from this new-fangled stop sign." Such was the comment made by Mr. Guy McDonald, Traffic Engineer, Los Angeles County, upon receipt of the following letter:

"I would like to suggest a stop sign for all County roads as well as City stop.

"County Roads poles high enough to be standerplus to hang a steel sheet 80 inches wide, painted red with white letters you must stop such sign to be put in two hundred but from said crossing stateing zone stop is two hundred feet forward.

"And right stop and the red stones for lettering.

"Use the same in City lights and go signs on a signal Board.

"Then pass a law that any one shotting sign and convicted fine one year in jail or $2500 fine."

Perhaps some of the brilliant traffic engineers who are readers of the magazine might have some suggestion regarding the above. At least, they should get a chuckle out of it.

C. C. CLARK

Beverly Hills, Cal.

New Passenger Conveyor Proposal

The following letter was written in regards to Colonel Bingham's article "A New Development in Transportation" which appeared in the magazine last spring.—EDITOR

Dear Sir:

I was most interested to read Colonel Bingham's paper published in your April issue, in which he described the conveyor-belt system of passenger transport which is to be installed in New York. He states that "the conveyor, it seems to me, is the prototype of the greatest advance in mass transportation we have seen in many years"; and that "we are studying extensions of this system which can be applied to transit operations of any length with way stations along the route to be served."

He also states that "no other plan or system of moving belts for passenger transportation has ever been presented which compares with the merits of this design to meet the exacting requirements for safety, economy and efficiency demanded in rapid transit operation". I wonder whether he has seen the proposal put forward by Professor Immirzi of Naples in an article which appeared last year in the Revue of the International Union of Public Transport? I cannot do better than quote from the English summary of this article, which states that the proposal is for

". . . building a tunnel 3m x 3.90m (10 feet by 12′ 6″) under the road or sidewalk and installing, in a parallel manner, a fixed pavement 1.10 metres wide, a conveyor belt 1.20 metres wide, comprising a continuous series of articulated vehicles fitted with barriers and hand-rails, and a second belt, contiguous to the first, 1.40 metres wide, but the vehicles of which are provided with seats. The system is operated on pneumatic tires and the vehicles are guided in a lateral direction by means of two small horizontal wheels.

"The outside belt moves at a uniform speed of 24 km/h (15 m.p.h.); the centre belt, which is used for the transfers of passengers, stops during the time necessary for them to mount from the fixed pavement and then commences to move until it attains, within 15 seconds, the speed of the outside belt; the passengers then take their seats on the outside belt (or leave them) and the belt slows down gradually until it stops again. The cycle lasts for approximately one minute and is repeated without interruption. The transport capacity would be approximately 100,000 persons per hour. . . . Traction is maintained by means of fixed vertical motors in pairs gripping, through the medium of two horizontal friction wheels, the continuous articulated member which forms the framework of the vehicles."

The advantages of such a system over that described by Colonel Bingham are obvious. Firstly, the passenger capacity is much higher—the Professor assumes 4 persons per metre on the continuously-moving belt, which would move at 6.5 metres per second, giving a capacity of 94,000 persons per hour on this belt, plus at least 6,000 on the stop-and-go belt; this loading may be considered excessive, but even if we assume a loading of only 2 persons per yard, the capacity would still be treble that of the New York system (given as 16,000 persons per hour). Secondly, for journeys longer than the distance between consecutive stations a continuously-moving belt would obviously provide quicker travel than would a system involving stops every half-mile or so—an average journey speed of at least about 15 m.p.h. seems essential if belt systems are to provide a satisfactory alternative to trains or buses over fairly long distances.

This brings me to the question "What is meant by 'rapid transit'?" Does the term merely mean something more rapid than buses using congested city streets, and stopping every few hundred yards, sometimes for longish periods while the wretched driver takes lots of fares? Or does it mean a form of transport which can compete in speed with the private car, at any rate in urban areas? In London, for instance, the average speed of buses in the central area is 11.24 m.p.h. (compared with about 8 m.p.h. in New York, the difference being due partly perhaps to the fact that in London the driver does not have to collect fares—this is done by a conductor while the bus is in motion). The average speed of underground railways, with stops about half a mile apart, is 17 m.p.h. The average speed of electrified main-line suburban services, with stations about a mile apart, is about 28 m.p.h.; while on certain main lines there are frequent non-stop services much used by commuters which average 40 m.p.h. or more.

Since London has no expressways, the latter type of service can compete very favourably in speed with travel by private car from the suburbs to the central area, as far as the actual rail journey is concerned; though in many cases the need to change at the rail terminal onto a bus, and possibly to queue in the wind and rain for this bus, do not exactly encourage the car owner to leave his car at home. Plans have been put forward for extending the suburban main line service into and across the central area in new tunnels, but it is unlikely that this will be done in the near future. But if new conveyor-belt services would be provided, with an average speed of about 15 m.p.h., to distribute commuters over the central area, so to speak, then the attractiveness of public transport would be greatly enhanced.

For any new system of public transport to be introduced in London, it would have to be not merely better than the existing systems: it would have to be very much better. It seems unlikely that a conveyor belt system could ever compete with fast trains for the suburban services; but it might well be very much superior to our "tube" railways for the in-town services—especially if some form of dual-belt system, such as that proposed by Professor Immirzi—proves feasible. The Professor is not very specific, however, as to what safety measures he envisages to prevent people from jumping onto his inner belt while it is moving. Perhaps it would be necessary to replace his stop-and-go belt and fixed platform with a set-up on the lines of the New York system (but narrower), and then provide for interchange between these stop-and-go cars and other cars on an outer belt which would travel continuously at 15 m.p.h. or so. Both sets of cars could be fitted with sliding doors which would open only at the appropriate times. Such a system could be safe, economical and reasonably rapid (by downtown standards). It might indeed prove to be "the greatest advance in mass transportation we have seen in many years." The cities which could profit most from it are those which at present have no "rapid transit" system (e.g., San Francisco?)

Yours faithfully,

NIGEL SEYMER

May 18, 1955

A copy of this letter was forwarded to Colonel Bingham. His comments follow.—EDITOR

Dear Sir:

I am sorry that I do not have the time to comment on Mr. Seymer's letter in detail.

However, the scheme proposed by Professor Immirzi appears to be almost identical with a plan that was promoted in Detroit in 1929 and which is covered by patents granted in 1935 and 1936 and assigned to the Westinghouse Electric Company.

The system described presents several engineering problems but they are of secondary importance in comparison with a basic fallacy in the entire conception. Although the system described is in part a continuous running system it remains essentially a batch loading system. A passenger arriving at the station has to wait for the boarding conveyor to stop before he can enter. That gets us right back to the crowding and pushing to catch a train and to the delay for the passenger who has just missed a train.

I can see other objections, and one that looms large to me is the problem involved in designing such a system so that trains of articulated vehicles could get around the 180° turn-around in the space available to us in our shuttle. The turning radius would have to be large enough to make it safe for passengers to ride around standing up at 15 miles per hour. To have the same centrifugal force on a passenger that would exist in our system this radius would have to be approximately 180 feet.

I regret that time does not permit me to obtain the full text of Professor Immirzi's article so that his system can be analyzed completely.

I am in agreement with your correspondent, Mr. Seymer, that a conveyor belt system could probably never compete with fast trains in suburban services, but that it has obvious advantages for rapid transit service in the heavily built up downtown areas of our cities.

Very truly yours,

S. H. BINGHAM

June 10, 1955

SECTION NEWS

(Continued from page 427)

New York Metropolitan Section

April Meeting Highlights

Eighty-five members and guests, including thirty-six students and faculty friends from the Yale Bureau of Highway Traffic attended the interesting meeting in the Port Authority Building April 21st.

Commissioner **T. T. Wiley** of the New York City Department of Traffic explained the $94 million off-street parking program which is intentionally being designed to attract more shoppers and fewer commuters to the facilities, particularly in Manhattan and in business areas of Queens and Brooklyn. Peripheral lots, that will intercept City Transit routes, are also planned to provide commuters with multi-hour parking spaces.

Using slides of "before-and-after" conditions, Commissioner **Wiley** gave a number of examples of traffic improvement throughout the city, from increased use of parking meters and parking restrictions, one-way avenues, channelization, improved signs and turn-restrictions. (The proverbial "uphill battles" of the traffic engineer are the same in Olde Nieuw Yorke as elsewhere . . . only they are ofttimes rougher, tougher, steeper, and needless to say, more of them!)

Mr. R. H. Gilman, Director of Port Development for the Port Authority, explained in detail the Joint Study of Arterial Facilities for the New York-New Jersey Metropolitan Area. This recently-published report recommended construction of a Narrows Bridge, a Throgs Neck Bridge and an additional deck on the George Washington Bridge. The fastest-growing element in trans-Hudson River traffic, according to the study, is the traffic that has both an origin and a destination outside Manhattan.

YEARBOOK CHANGES

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Where? Pittsburgh, Pennsylvania

When? October 24-27, 1955

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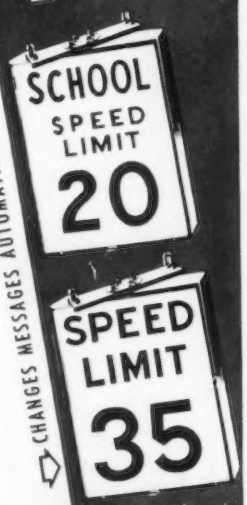

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New Local Section Formed

A meeting was held on June 8, 1955 in the office of *Paul S. Robinette,* Traffic Commissioner, City of Toledo, with eleven Ohio members of the Institute in attendance as well as Vice-President *McMonagle* and Director *Malo.* At this meeting an application for a charter as the Ohio section was written and signed by the eleven Ohio members. Vice-President *McMonagle* and Director *Malo* presented this petition to the Board of Direction in Atlanta, which on June 11th authorized the formation of an Ohio section.

The eleven charter members of the new section are: *H. G. Eckhardt,* of the Ohio Department of Highways; *V. James Musick,* and *John L. Gallagher, Jr.,* of the City of Columbus; *J. Anthony Carrothers,* of the City of Dayton; *Thomas E. Young, Roy H. Fielding, M. Clyde Condrey,* and *George W. Howie,* of the City of Cincinnati; *Thomas R. Galloway,* of Hazelet and Erdal Consultants; *Herbert B. Woodling,* of the City of Akron; and *Paul S. Robinette,* of the City of Toledo.

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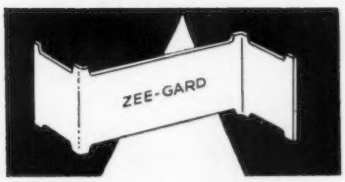

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